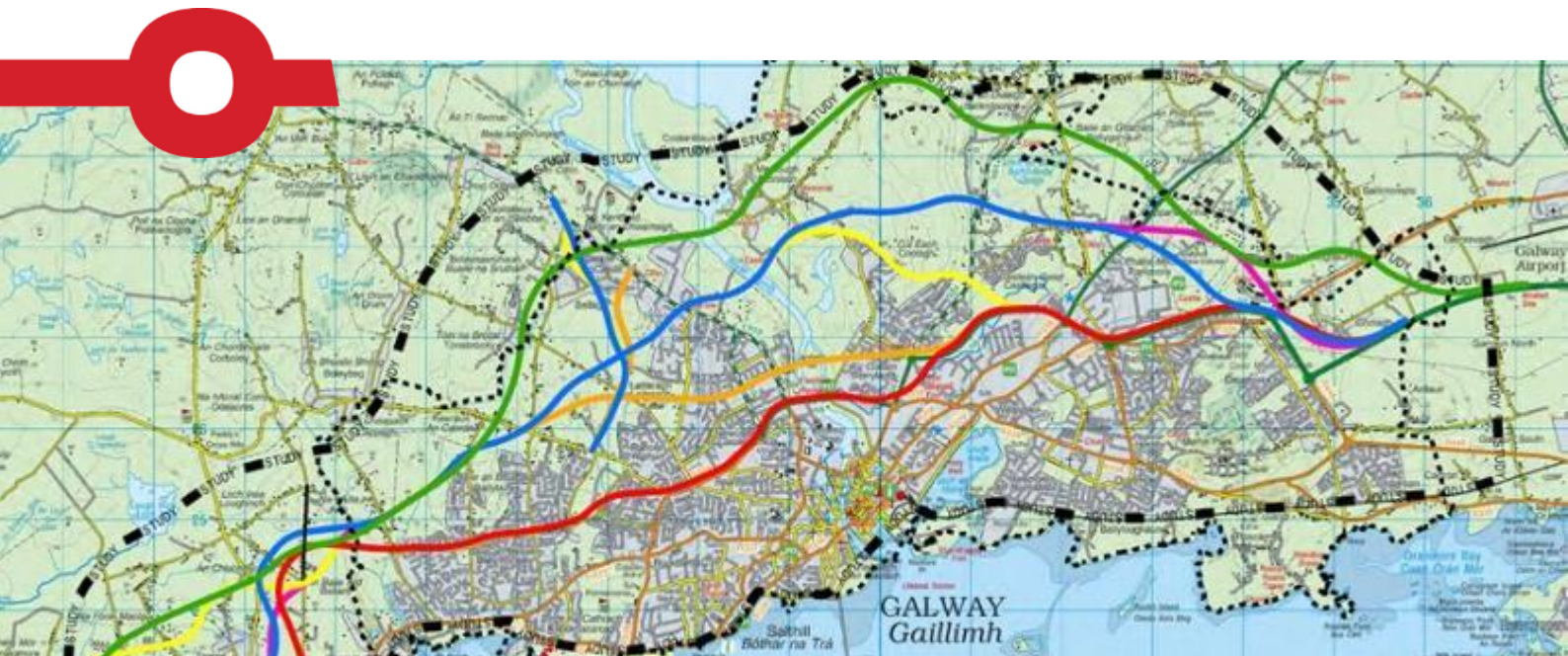


Appendix A

A.7.2 Cost Benefit Analysis Report

PHASE 2 ROUTE SELECTION – COST BENEFIT ANALYSIS REPORT



N6 GALWAY CITY TRANSPORT PROJECT

PHASE 2 ROUTE SELECTION – COST BENEFIT ANALYSIS REPORT

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1. INTRODUCTION

1.1 Overview

1.1.1 This report sets out the economic assessment undertaken as part of the Route Selection Phase of the N6 Galway City Transport Project.

1.1.2 This analysis has been carried out using the TUBA v1.9 cost benefit analysis program in accordance with National Roads Authority¹ (NRA) Project Appraisal Guidelines (PAG) 2011.

1.2 TUBA

1.2.1 Cost Benefit Analysis (CBA) forms one element of the appraisal process for road infrastructure projects. At Route Selection Phase, the benefits and costs of the proposed scheme are assessed using agreed traffic growth scenarios. The TUBA program compares the “Do-Minimum” scenario (i.e. not to progress with the scheme) with a number of “Do-Something” scenarios (i.e. the scheme options) and determines whether benefits resulting from each scheme option will outweigh the costs of construction and future maintenance.

1.3 CBA at Route Selection Phase

1.3.1 At Phase 2: Route Selection, the CBA should be undertaken at a scale that is appropriate for the phase of scheme appraisal. It was agreed with NRA that the CBA would be carried out for the opening year (2019) and design year (2034) for the medium growth scenario.

1.3.2 This will provide a comparative assessment of the options on an equal level from which the preferred option can be selected and taken forward to Phase 3: Selection of Preferred Route Corridor. At Phase 3 a full CBA (3 years and 3 growth scenarios) shall be undertaken for the preferred option.

1.4 Scheme Description

Do Minimum Network

1.4.1 The future year ‘Do-Minimum’ network includes the 2012 base network plus all the schemes (road and public transport) that are already built or are committed or likely to be built by 2019 and 2034. The list of schemes to be included was developed in coordination with Galway City Council, Galway County Council, NRA and NTA.

¹ The Minister for Transport, Tourism and Sport has signed the order for the merger of the National Roads Authority (NRA) with the Railway Procurement Agency (RPA) to establish a single new entity called Transport Infrastructure Ireland (TII). The National Roads Authority is known as Transport Infrastructure Ireland (TII) since 1st of August 2015. All references to guidance documents and standards within this report will retain the *NRA* reference until such time as these documents are updated.

Do Something Networks

1.4.2 The Do Something networks include six major road scheme investment alternatives. The six road options under consideration are as follows:

- Red Route Option: On-line option involving an upgrade of the existing N6;
- Orange Route Option: Partial On-line option to Terryland plus proposed tunnel under River Corrib;
- Yellow Route Option: Partial On-line option to Terryland, bridge over limestone pavement in cSAC plus proposed bridge over River Corrib;
- Blue Route Option: Off-line option in tunnel through Galway Racecourse and Lackagh Quarry, tunnel under limestone pavement in cSAC plus proposed bridge over River Corrib;
- Pink Route Option: Off-line option in tunnel north of Galway Racecourse and through Lackagh Quarry, tunnel under limestone pavement in cSAC plus proposed bridge over River Corrib;
- Green Route Option: Most northern off-line option and outside the cSAC plus proposed bridge over River Corrib.

1.4.3 Table 1 below summarises the road scheme options in terms of proposed cross-section and scheme length. The alignments and cross-sections may be subject to change following selection of the preferred route, an incremental analysis process on optimum cross-section and further design work.

Table 1. Road Scheme Route Options Summary

ROUTE OPTION	SCHEME LENGTH (KM)	CROSS-SECTION
Red	15.07	Type 2 Dual Carriageway ("3+3" & "2+2"), Single Carriageway
Orange	14.88	Type 2 Dual Carriageway ("3+3" & "2+2"), Single Carriageway
Yellow	17.21	Type 2 Dual Carriageway ("3+3" & "2+2"), Single Carriageway
Blue	15.66*	Type 2 Dual Carriageway ("2+2"), Single Carriageway
Pink	15.66*	Type 2 Dual Carriageway ("2+2"), Single Carriageway
Green	20.16	Type 2 Dual Carriageway ("2+2"), Single Carriageway

* Length of Blue and Pink Route Options is measure from the Bearna Inner Relief Road

1.4.4 A map showing the six road scheme options under consideration is presented in Figure 1 overleaf.

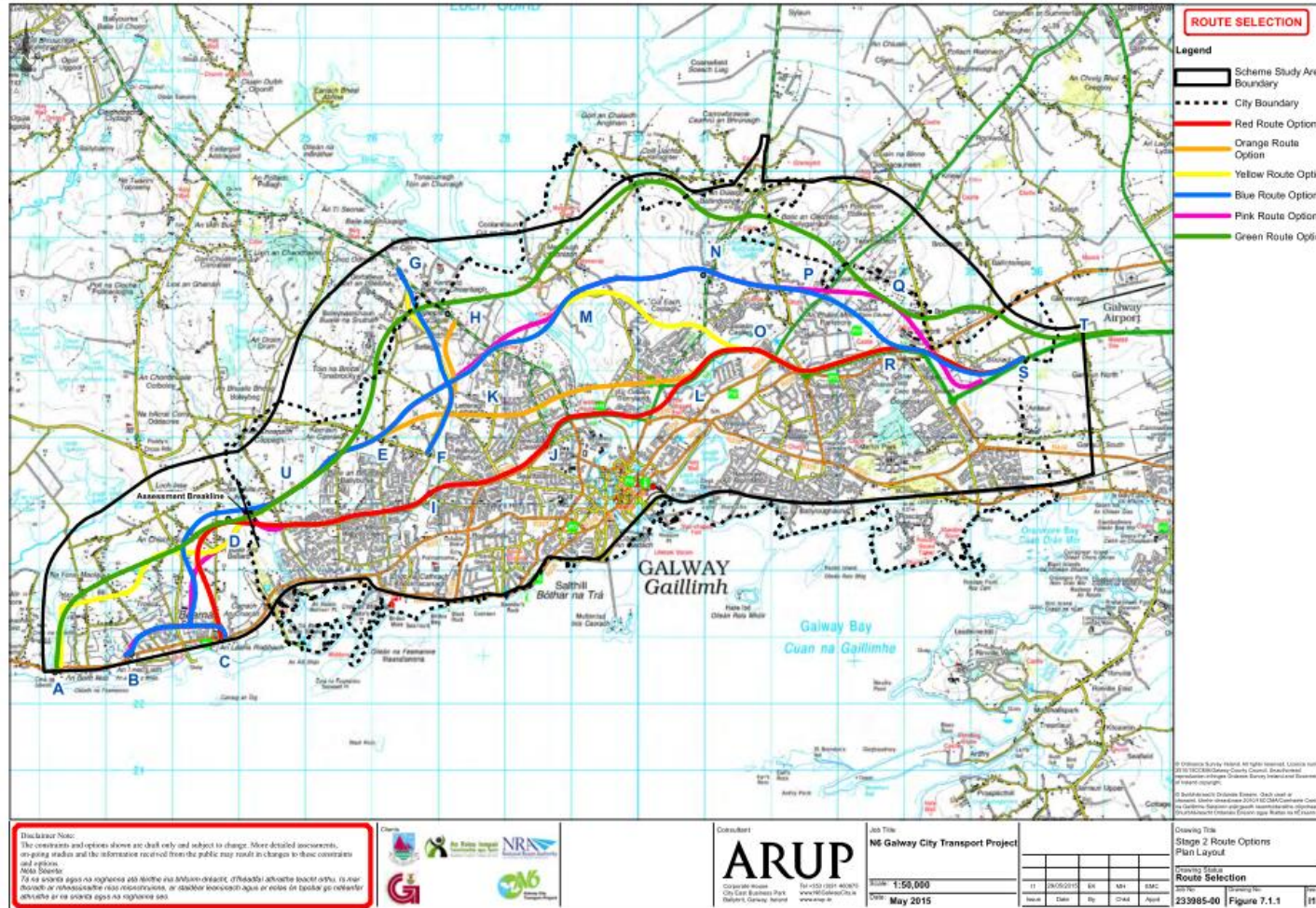


Figure 1. Galway City Transport Project – Road Scheme Options

- 1.4.5 Through consultation with key stakeholders including NRA, NTA, Galway County Council and Galway City Council the need for a transport strategy for Galway has been identified which will identify the level of service requirements for each mode of transport; including walking, cycling, public transport and car.
- 1.4.6 A further review of the preferred route option will be undertaken in the context of the recommendations of the wider Galway Transport Strategy, at Phase 3. This may comprise a public transport scheme alternative option which will be subject to a CBA at this phase.

1.5 Report Structure

1.5.1 This report is set out into the following sections:

2. *Software Specification* sets out the version of the CBA software used in the assessment and the version of the National Parameter Values Sheet.
3. *CBA Network* describes the extent of the network modelled as part of the appraisal.
4. *Data Collection* summaries the extent of data collected for the purposes of a CBA
5. *CBA Input Assumptions* references the specific parameters and assumptions used in the CBA
6. *Safety Benefits* presents details the appraisal of benefits associated with the reduction in collisions associated with the scheme options.
7. *Annualisation* outlines the methodology used for converting the scheme benefits forecast in the modelled time periods into annual benefits
8. *CBA Results Summary* contains the summary of the results of the assessment for all options and includes details of the Impact on the Public Accounts.
9. *Conclusions* summarises the overall process and includes a summary table of results of the CBA for each scheme option

2. SOFTWARE SPECIFICATION

2.1 TUBA Specification

- 2.1.1 This CBA Route Selection Phase assessment was undertaken using the TUBA v1.9 cost benefit analysis programme. This programme uses a Discount Rate of 4%, with all figures discounted back to a base year of 2009. The analysis has been carried out in accordance with NRAPAG Unit 5.6: Guidance on Using TUBA and with reference to NRA PAG Unit 6.11 National Parameter Values Sheets (2011).

3. CBA NETWORK

3.1 CBA Network

3.1.1 In order to calculate the benefits of a proposed scheme, TUBA uses matrix based outputs (skims) directly from the Do-Minimum and Do-Something traffic models developed as part of the Route Selection process.

3.1.2 As such the modelled area used in TUBA is identical to the modelled area developed for the traffic model. The model contains a total of 298 zones; reference should be made to the N6 Galway City Transport Project - Traffic Modelling Report (TMR) for details of the development of the road network and zoning system.

3.1.3 The extent of the model network is illustrated in Figure 2 and covers the area that may be impacted by the introduction of the proposed scheme. The area in red represents the simulation network in the traffic model, i.e. with a detailed representation of junction capacities. The area in blue represents the buffer network which includes link based speed-flow capacity data. The remaining area is external to the model network.



Figure 2. Modelled Road Network

3.1.4 The traffic model results were checked in detail for assignment convergence statistics and the associated impacts on scheme appraisal in TUBA. Areas of ‘noise’, i.e. potential impacts due to model convergence issues, in the traffic models were reviewed and eliminated prior to undertaking TUBA model runs.

4. DATA COLLECTION

4.1 Overview

4.1.1 TUBA uses trip matrices and travel cost skims (time, distance and tolls) extracted directly from the traffic model of the proposed scheme to calculate user benefits. Therefore no additional data was required in order to develop the TUBA model.

4.1.2 In summary, the following data was collected as part of the development of the traffic models:

- 58 no. 12-hour manually classified Junction Turning Counts (JTCs);
- 58 no. temporary Automatic Traffic Counters (ATCs);
- Traffic signal staging and timings data from Galway City Council; and
- Journey time data for multiple routes in the study area from the TomTom database.

4.1.3 Reference should be made to the N6 Galway City Transport Project - Traffic Modelling Report (TMR) for details of data collected as part of the development of the traffic model.

5. CBA INPUT ASSUMPTIONS

5.1 Input Parameters

5.1.1 All general parameters such as value of time, value of time growth rates, discount rates, fuel cost changes, fuel consumption, vehicle operating costs fuel/non fuel, trip purpose distribution, tax rates, change in tax rates, vehicle occupancy rates, vehicle proportions and collision rates were taken from the NRA Unit 6.11 National Parameters Value Sheets in the 2011 Project Appraisal Guidelines.

5.1.2 Fuel efficiency was taken from UK WebTAG guidance as no guidance is currently available in Ireland. Fleet fuel type proportions were available from the Department of Environment; the proportions are given in Table 2 below. The forecasts changes to fleet fuel type were taken from WebTAG as set out in Table 3. Data on fuel costs, duty and VAT is provided in Table 4.

Table 2. Car Fleet Fuel Type Split

YEAR	PETROL	DIESEL
2009	77.6%	22.4%

Table 3. Forecast Change in Car Fleet Fuel Type Split

START YEAR	END YEAR	VEHICLE TYPE	% CHANGE PETROL
2010	2010	1 – Car	-2.4
2011	2025	1 – Car	-1.27
2026	2080	1 – Car	0.00

Table 4. Fuel Costs

FUEL TYPE	RESOURCE COST (CENTS / L)	DUTY (CENTS / L)	VAT (%)	CARBON (GRAMS / L)
Petrol	44.76	50.88	21.5	627.57
Diesel	44.51	40.91	21.5	717.15

*VAT increased to 23% as and from 1st January 2012

5.2 Scheme Costs – Capital Costs

5.2.1 As stipulated in the Project Appraisal Guidelines, costs are represented in 2009 prices and values exclusive of VAT in CBA appraisal. The Option Comparison Estimate (OCE) Costs are set out below, in current (2015) prices. These cost have been developed and agreed with the NRA. A detailed breakdown of the scheme costs are presented in Appendix C.

- 5.2.2 The OCE was prepared based on the base costs of construction, supervision, archaeology, advance works, residuals, land & property and planning & design but supplemented by an NRA Programme Risk and Total Inflation allowance. The OCE is outlined in Table 5 below. Note that for appraisal purposes and in accordance with PAG Unit 6.7, costs have been input into TUBA exclusive of VAT.

Table 5. Capital Costs - Option Comparison Estimate (2015 prices)

OPTION	€ M (INCL. VAT)	€ M (EXCL. VAT)
Red	834.34	768.48
Orange	998.48	895.98
Yellow	509.38	466.24
Blue	594.50	547.23
Pink	583.07	535.25
Green	595.73	552.49

- 5.2.3 No shadow pricing or Relative Price Factor has been used in the determination of costs.

5.3 Scheme Costs – Maintenance Costs

- 5.3.1 Annual maintenance costs for each route option have been included in the appraisal. The default maintenance costs by road type in NRA PAG Unit 6.11 have been used on the lengths of standard cross-section of each route option.
- 5.3.2 As the tunnelling requirements of each route option differ, separate annual maintenance cost for tunnels were also included, based on data from the World Roads Association ‘Road Tunnels Manual’²
- 5.3.3 The manual states that over a 30 year period, approximately 70% of tunnel costs are associated with construction and the remaining 30% associated with operation and maintenance. Applying this ratio to the per km construction rates for tunnels and allowing for a risk rate of 10%, the annual operation and maintenance costs per km for the tunnelled section of each route option are presented in Table 6.

² <http://tunnels.piarc.org/en/>

Table 6. Tunnel Annual Operation & Maintenance Costs (2015 prices)

TUNNEL TYPE	ANNUAL COST (€ M, INCL. VAT)
Cut & Cover	0.971
Bored	1.656
Roadheader	0.629

5.4 Residual Value

5.4.1 For major transport schemes, the residual value is a measure of the net present value of the infrastructure over a specified period beyond the 30-year appraisal period. In this case a residual value period of 30 years is applied based on the guidance outlined in Table 6.1.2 of NRA PAG Unit 6.1: Guidance on Conducting CBA. The residual value is included in the final table of results.

6. SAFETY BENEFITS

6.1 Overview

6.1.1 The CBA program TUBA does not calculate collision costs. Past experience suggests that safety benefits can represent up to 20% of scheme benefits, therefore an assessment of potential safety benefits has been undertaken using a spreadsheet based methodology in accordance with PAG.

6.2 Methodology

6.2.1 The assessment of safety benefits is based on outputs from the traffic model and NRA standard collision parameters taken from NRA PAG Unit 6.11: National Parameter Values Sheet. The outline methodology is as follows:

- The total vehicle kilometres (vkm) travelled on each link in the network annually were calculated;
- A PIA (personal injury accident) rate (per million vehicle km) was then applied to each link type (non-motorway) in the network based on PAG Unit 6.11 to generate the total number of PIA per link;
- A casualty rate per PIA (fatal/serious/minor) was then applied to generate the total number of casualties per link;
- A cost per casualty (fatal/serious/minor) was then applied; and
- The total collision costs were then calculated by summing up all link costs in the network.

6.2.2 This process was undertaken using the opening (2019) and design (2034) year models, for each scheme option and for the medium growth scenario. Collision costs for the entire 30 year appraisal period (2019 - 2049) were calculated based on interpolated costs between the opening and design year, beyond the design year (2034-2039).

6.2.3 It should be noted that upon the selection of the preferred route and updated design process at Phase 3, local collision data will be incorporated into the safety appraisal. However the use of standard parameters is appropriate for the route selection phase and an objective comparison between the forecast performance of the route options.

6.3 Safety Benefits

6.3.1 The results of the safety assessment are presented in the Table 7 overleaf. The results show the discounted safety benefits in 2009 prices, exclusive of residual value.

Table 7. Discounted Safety Benefits (2009 Values)

ROUTE OPTION	SAFETY COSTS (€M)	SAFETY BENEFITS (€M)	DISCOUNTED SAFETY BENEFITS (€M)
Do Minimum	13,522	-	-
Red	12,853	669	263
Orange	13,142	381	157
Yellow	13,057	465	191
Blue	13,411	111	58
Pink	13,342	180	85
Green	13,575	-53	-5

6.3.2 In terms of safety benefits, the Red, Yellow and Orange Route Options are forecast to have significant safety benefits to the network, with high levels of traffic transferred on to newer, safer roads. The Blue and Pink Route Options also provide benefits but somewhat reduced, due to reduced volumes on these routes. The Green Route Option is forecast to have marginal benefits, or potential disbenefits, due to lower forecast vehicle kilometres on this newer, safer scheme option with associated higher vehicle kilometres on the existing, less safe, network.

6.3.3 It should be noted that the safety benefits outlined at this comparative stage do not incorporate benefits from potential works that may be carried out in the future as part of the wider Integrated Transport Management Programme for Galway. For example, it is anticipated that the off-line options (Blue, Pink, and Green) will result in a reduction in traffic levels on the existing N6. This would provide the opportunity for some of the road space on the existing N6 to be reassigned for more vulnerable road users e.g. pedestrians and cyclists. Schemes such as this would have associated safety benefits which have not been included in the calculations above. This approach is appropriate for the route selection phase of the project. A more detailed safety analysis will be carried out upon the selection of the preferred route and updated design in Phase 3 of the project.

7. ANNUALISATION

7.1 Traffic Profiles

7.1.1 An analysis has been undertaken on weekday and weekend traffic flow profiles in Galway in order to assist in developing appropriate annualisation factors. A selection of ATC sites around the Galway urban area were collated to develop weighted average traffic flows for a typical weekday and weekend. The resulting daily traffic profiles are presented in Figure 3.

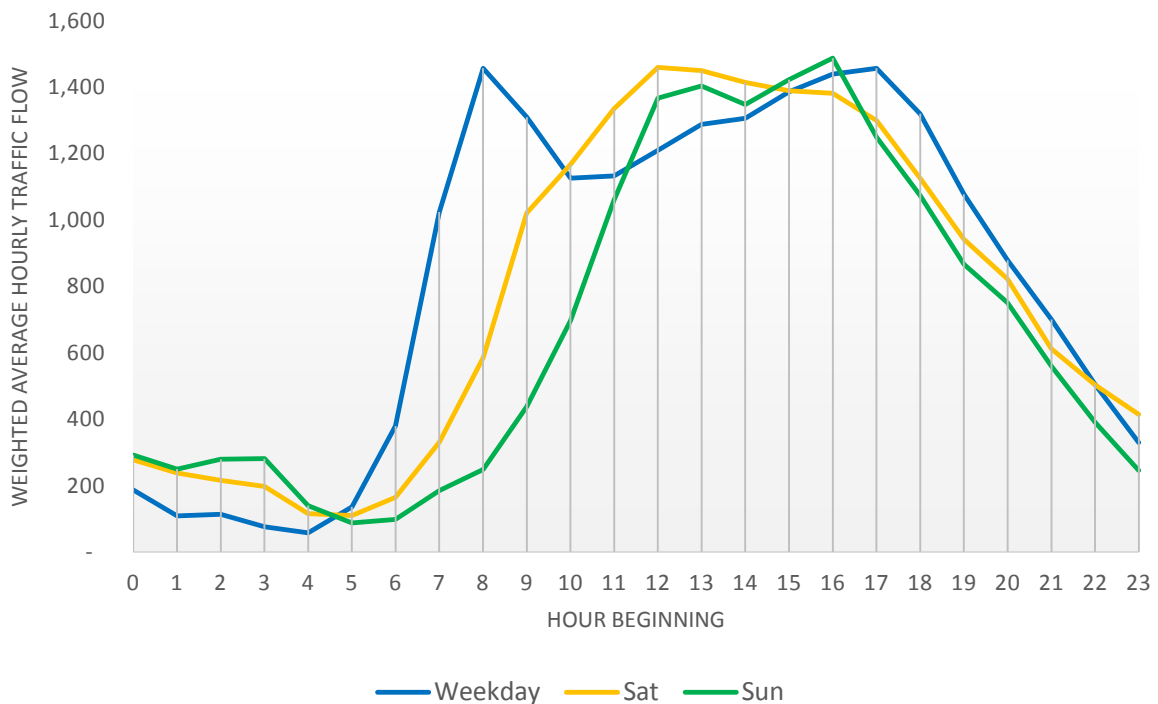


Figure 3. Galway Daily Traffic Profiles

7.1.2 The main difference between weekday and weekend flow profiles is the presence of a clear morning peak period on weekdays. The inter peak, evening peak and off peak profiles of weekday and weekend traffic exhibit similar profiles.

7.1.3 When reviewing the weekday AM and PM peak periods, the data indicates that the AM period from 8-10am, is similar in profile to the PM period from 4-7pm. It is acknowledged however that demand in the 7-8am period is lower.

7.1.4 Notwithstanding this, the AM peak hour model has been used to estimate full AM and PM period benefits. The period of reduced demand from 7-8am has been accounted for using factors developed to expand from AM peak hour to AM and PM peak periods described in Section 7.2.

7.1.5 This approach is considered appropriate for the comparative analysis of route options at Phase 2. At Phase 3 Design stage, further detailed analysis of annualisation will be undertaken, incorporating the use of a PM peak model.

7.1.6 The weekday average inter peak hour (10:00-16:00) and off peak profiles are similar to those at the weekends. It is considered appropriate to use the weekday average inter peak hour model to estimate the benefits during periods of lower demand such as the weekday off peak and weekend, using the appropriate factors described below.

7.2 Annualisation Factors

7.2.1 Annualisation factors are used to convert the benefits from the modelled time periods to annual benefits. The benefits in each modelled time period are multiplied by the annualisation factor and then summed to give annual benefits.

7.2.2 Factors have been developed to derive annual average daily benefits using a regression analysis of the 72 no. days of ATC count data. This analysis involved the derivation of factors to convert from:

- Weekday AM peak hour to weekday AM & PM peak periods;
- Weekday average inter peak hour to weekday off peak period; and
- Weekday average inter peak hour to weekend average 24 hours.

7.2.3 These factors are presented in Table 8.

Table 8. Factors derived from traffic count data

MODELLED TIME PERIOD	CARS	LGV	HGV	WEIGHTED AVERAGE
AM Peak Hour to Weekday AM & PM Peak Period	5.127	5.017	4.655	5.105
Average IP Hour to Weekday Off Peak	3.470	2.210	2.667	3.366
Average IP Hour to Weekend Average 24 Hour	13.290	7.787	10.089	12.843

7.2.4 A factor of 253 has been used to factor average daily data to total annual working days as there are 253 peaked weekdays per annum. A factor of 112 has been used to represent the weekends and bank holidays.

7.2.5 The annual calculation of benefits is as follows:

- AM Peak Hour Benefits to Annual AM & PM Peak Period Benefits (07:00-10:00) & (16:00-19:00): $253 \text{ working days} \times 5.105 = 1,291$
- Average Inter Peak Hour Benefits to Annual Working Day Inter Peak and Off-Peak Benefits: $(253 \times 6) + (253 \times 3.366) = 2,370$
- Average Inter Peak Hour Benefits to Annual weekend benefits: $112 \times 12.843 = 1,438$

7.2.6 The resulting combined annualisation factors that were used in the TUBA model runs are presented in Table 9.

Table 9. Combined annualisation factors used in TUBA models

MODELLED TIME PERIOD	ANNUALISATION FACTOR
AM Peak Hour (08:00-09:00)	1,291
Average Inter Peak Hour (10:00-16:00)	3,808

8. TUBA RESULTS SUMMARY

8.1 Overview

8.1.1 The results of the Cost Benefit Analysis are presented below based upon the annualisation factors outlined above. The results take into account scheme safety benefits and residual value.

8.2 Medium Growth Scenario

8.2.1 The benefits of the proposed scheme based on the medium traffic growth scenario are outlined in Tables 10 to 15, for the Option Comparison Estimate Costs for each scheme option.

Table 10. Cost Benefit Analysis Summary – Red Route Option

RED ROUTE OPTION	€ '000
Consumer User Benefits	931,355
Business User Benefits	380,362
Indirect Tax Revenues	-1,492
Carbon Benefits	44
Safety Benefits	262,800
Residual Value	538,073
Present Value of Benefits (PVB)	2,111,142
Present Value of Costs (PVC)	635,586
Net Present Value (NPV)	1,475,556
Benefit to Cost Ratio (BCR)	3.3

Table 11. Cost Benefit Analysis Summary – Orange Route Option

ORANGE ROUTE OPTION	€ '000
Consumer User Benefits	872,073
Business User Benefits	346,374
Indirect Tax Revenues	-1,398
Carbon Benefits	42
Safety Benefits	157,100
Residual Value	556,782
Present Value of Benefits (PVB)	1,930,973
Present Value of Costs (PVC)	808,398
Net Present Value (NPV)	1,122,575
Benefit to Cost Ratio (BCR)	2.4

Table 12. Cost Benefit Analysis Summary – Yellow Route Option

YELLOW ROUTE OPTION	€ '000
Consumer User Benefits	670,898
Business User Benefits	241,850
Indirect Tax Revenues	-1,462
Carbon Benefits	34
Safety Benefits	191,200
Residual Value	362,795
Present Value of Benefits (PVB)	1,465,315
Present Value of Costs (PVC)	380,653
Net Present Value (NPV)	1,084,662
Benefit to Cost Ratio (BCR)	3.8

Table 13. Cost Benefit Analysis Summary – Blue Route Option

BLUE ROUTE OPTION	€ '000
Consumer User Benefits	733,276
Business User Benefits	287,170
Indirect Tax Revenues	-1,883
Carbon Benefits	37
Safety Benefits	57,800
Residual Value	504,731
Present Value of Benefits (PVB)	1,581,131
Present Value of Costs (PVC)	457,671
Net Present Value (NPV)	1,123,460
Benefit to Cost Ratio (BCR)	3.5

Table 14. Cost Benefit Analysis Summary – Pink Route Option

PINK ROUTE OPTION	€ '000
Consumer User Benefits	785,189
Business User Benefits	323,073
Indirect Tax Revenues	-1,779
Carbon Benefits	39
Safety Benefits	85,400
Residual Value	537,927
Present Value of Benefits (PVB)	1,729,849
Present Value of Costs (PVC)	446,171
Net Present Value (NPV)	1,283,678
Benefit to Cost Ratio (BCR)	3.9

Table 15. Cost Benefit Analysis Summary – Green Route Option

GREEN ROUTE OPTION	€ '000
Consumer User Benefits	757,856
Business User Benefits	218,828
Indirect Tax Revenues	-965
Carbon Benefits	37
Safety Benefits	-5,100
Residual Value	684,920
Present Value of Benefits (PVB)	1,655,576
Present Value of Costs (PVC)	455,565
Net Present Value (NPV)	1,200,011
Benefit to Cost Ratio (BCR)	3.6

8.3 Impact on Public Accounts

8.3.1 The “Impact on Public Accounts” for the proposed scheme is summarised in Table 16 below. This table fulfils the requirement of the exchequer cash flow analysis.

Table 16. Impact on Public Accounts (€ '000) – Medium Growth Scenarios

ROUTE OPTION	INVESTMENT COSTS (€ '000)
Red	635,586
Orange	808,398
Yellow	380,653
Blue	457,671
Pink	446,171
Green	455,565

9. EMERGING PREFERRED ROUTE CORRIDOR

9.1 Overview

9.1.1 A comprehensive appraisal of the route options was carried out using the multiple criteria outlined by the Department of Transport in their report ‘Guidelines on a Common Appraisal Framework for Transport Projects and Programmes (June 2009)’. This is in line with the approach of the Project Appraisal Guidelines and considers each option under the following criteria:

- Economy;
- Safety;
- Environment;
- Accessibility & Social Inclusion; and
- Integration.

9.1.2 Full details of this appraisal are contained in the Route Selection report. A summary matrix of the appraisal of the refined route using the five criteria is included in the Project Appraisal Matrix below in Table 17. Note that this assessment was carried out for the route options between the city boundary line to the west of Cappagh Road and the N6.

Table 17. Project Appraisal – City Boundary to N6

Route Option	Economy	Safety	Environment	Accessibility	Integration
Red	Intermediate	Similar	Least Preferred	Similar	Similar
Orange	Least Preferred	Similar	Preferred	Similar	Similar
Yellow	Preferred	Similar	Least Preferred	Similar	Similar
Blue	Preferred	Similar	Intermediate	Similar	Similar
Pink	Preferred	Similar	Preferred	Similar	Similar
Green	Preferred	Similar	Least Preferred	Similar	Similar

9.1.3 The above matrix indicates that the Pink Route Option is the preferred route option between the city boundary and the existing N6.

9.1.4 The Bearna section, i.e. R336 to city boundary, was assessed independently of the remainder of the route option to ensure that the optimum solution for Bearna is obtained. Therefore, the Environment criterion was the deciding factor on the Bearna section, with a combination of Yellow/Green/Pink being the preferred route option in the Bearna section.

9.1.5 Upon completion of this appraisal, the Emerging Preferred Route Corridor was developed as an amalgamation of different route options over the two sections, namely R336 to city boundary and city boundary to N6. The corridor is presented in Figure 4 overleaf.

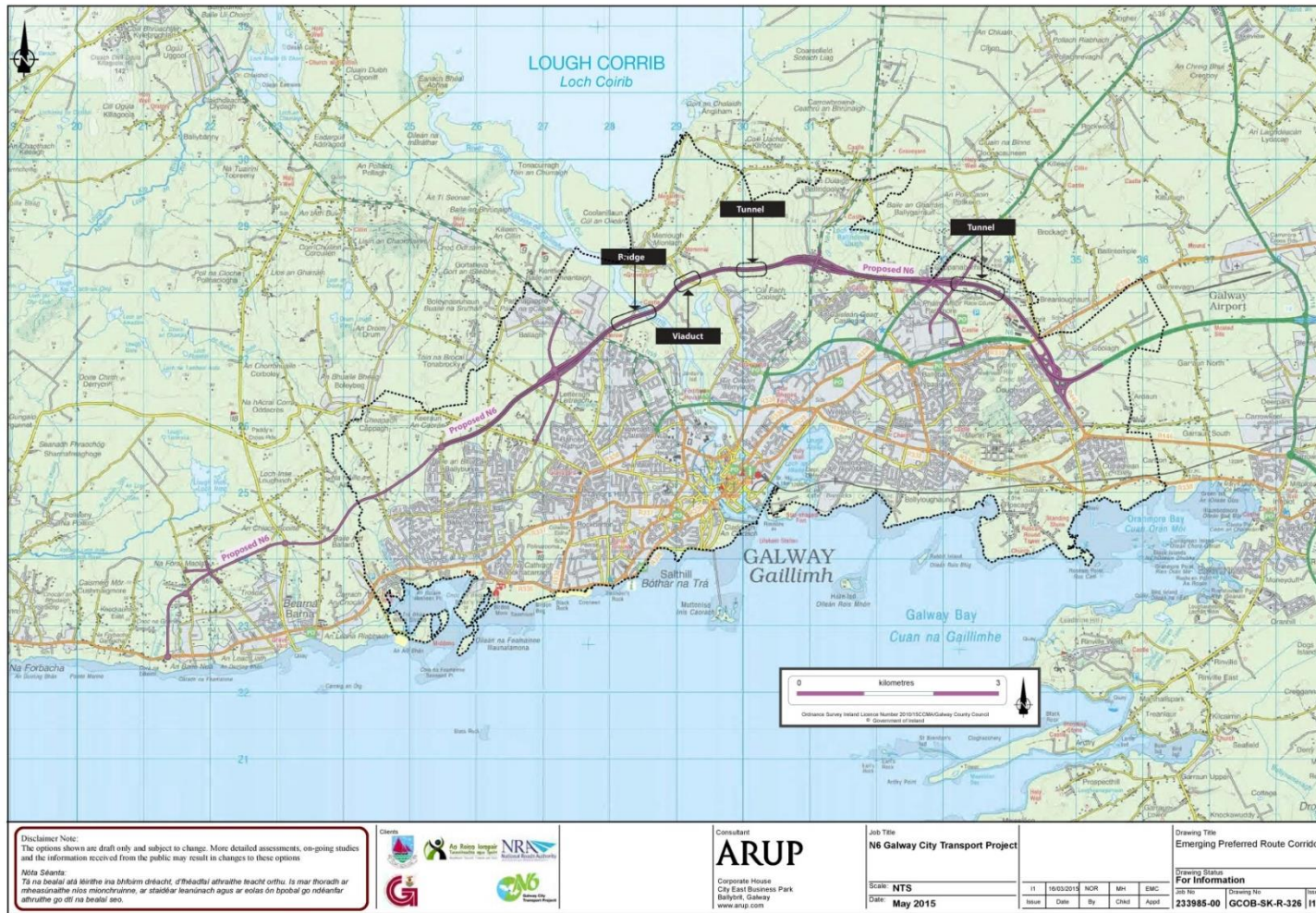


Figure 4. Galway City Transport Project – Emerging Preferred Route Corridor

9.2 Scheme Costs

9.2.1 The Option Comparison Estimate for the Emerging Preferred Route Corridor is outlined in Table 18 below. Note that for appraisal purposes and in accordance with PAG Unit 6.7, costs have been input into TUBA exclusive of VAT.

Table 18. Option Comparison Estimate – Emerging Preferred Route Corridor (current prices)

OPTION	€ M (INCL. VAT)	€ M (EXCL. VAT)
EPRC	605.3	554.4

9.2.2 Annual maintenance costs for the EPRC have been included in the appraisal as per the methodology described in Section 5.3.

9.3 Cost Benefit Analysis

9.3.1 An additional TUBA analysis and safety appraisal have been undertaken for the Emerging Preferred Route Corridor. Arising from this analysis, the benefits of the proposed scheme based on the medium traffic growth scenario are outlined in Table 19, for the Option Comparison Estimate Costs.

Table 19. Cost Benefit Analysis Summary – Emerging Preferred Route Corridor Option

EMERGING PREFERRED ROUTE CORRIDOR	€ '000
Consumer User Benefits	872,498
Business User Benefits	356,418
Indirect Tax Revenues	-1,866
Carbon Benefits	45
Safety Benefits	77,480
Residual Value	603,038
Present Value of Benefits (PVB)	1,907,613
Present Value of Costs (PVC)	460,376
Net Present Value (NPV)	1,447,237
Benefit to Cost Ratio (BCR)	4.1

9.3.2 For the EPRC, the Present Value of Benefits of €1,908m is approximately comprised of the following over the total appraisal period:

- + €1,287m time benefits;
- - €58m vehicle operating costs;
- + €0.05m emissions benefits;
- + €77m safety benefits;
- - €2m indirect tax revenues (cost); and
- + €603m residual value benefits.

9.3.3 Further details of the breakdown of costs and benefits is available in Appendix E.

9.3.4 Therefore the scheme is forecast to save over €1.4 billion in delay costs (in 2009 prices) in the Galway area over 30 years, when compared with a scenario where no scheme is provided.

10. CONCLUSIONS

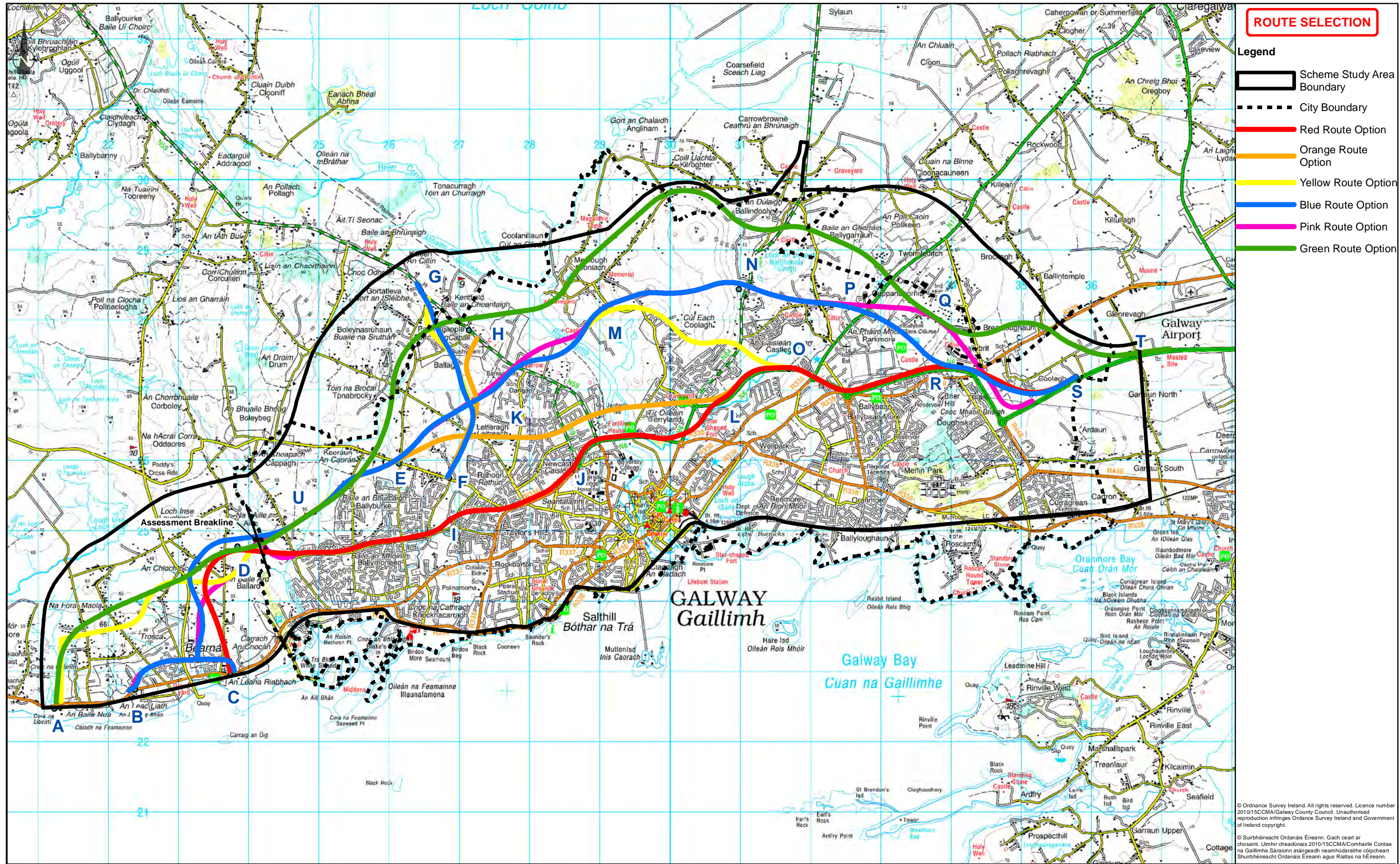
10.1.1 The Economic Assessment has been undertaken using the TUBA software programme in accordance with NRA Project Appraisal Guidelines 2011. The assessment has demonstrated Benefit to Cost Ratio values over a 30-year appraisal period (inclusive of residual value) based on the Option Comparison Estimate costs for each scheme option as presented in Table 20.

Table 20. Cost Benefit Analysis Summary Table (€'000)

OPTION	PVB	PVC	NPV	BCR
Red	€ 2,111,142	€ 635,586	€ 1,475,556	3.3
Orange	€ 1,930,973	€ 808,398	€ 1,122,575	2.4
Yellow	€ 1,465,315	€ 380,653	€ 1,084,662	3.8
Blue	€ 1,581,131	€ 457,671	€ 1,123,460	3.5
Pink	€ 1,729,849	€ 446,171	€ 1,283,678	3.9
Green	€ 1,655,576	€ 455,565	€ 1,200,011	3.6
EPRC	€ 1,907,613	€ 460,376	€ 1,447,237	4.1

10.1.2 The results indicate that, based on the scheme costs developed to date and the associated forecast performance of the transport network, all proposed scheme options represent value for money with forecast net present values in the region of €1.1-1.5bn. The TUBA output files are included as Appendix E of this report.

APPENDIX A: ROUTE OPTION DRAWINGS



ROUTE SELECTION

Legend

- Scheme Study Area Boundary
- City Boundary
- Red Route Option
- Orange Route Option
- Yellow Route Option
- Blue Route Option
- Pink Route Option
- Green Route Option

Disclaimer Note:
 The constraints and options shown are draft only and subject to change. More detailed assessments, on-going studies and the information received from the public may result in changes to these constraints and options.
Nóta Séanta:
 Tá na srianta agus na roghanna atá léirithe ina bhfoirm dréacht, d'fhéadfaí athraithe teacht orthu. Is mar thoradh ar mheasúnaithe níos mionchruinne, ar staidéar leanúnach agus ar eolas ón bpobal go ndéanfar athruithe ar na srianta agus na roghanna seo.

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Job Title
N6 Galway City Transport Project

Scale: **1:50,000**

Date: **May 2015**

Drawing Title
Stage 2 Route Options Plan Layout

Drawing Status
Route Selection

Job No	Drawing No	Issue
233985-00	Figure 7.1.1	11

Issue	Date	By	Chkd	Appd
I1	29/05/2015	EK	MH	EMC

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APPENDIX B: TUBA ECONOMIC INPUT FILE

TUBA 1.9.4 ECONOMIC PARAMETERS FILE

PARAMETERS

TUBA_version	1.9.4	the current version of TUBA
base_year	2009	defines base year for economic parameters
pres_val_year	2009	present value year for discounting
GDP_base	120.6	value of RPI in base year
av_ind_tax	19.1	% average final indirect tax rate
nt_carbdxvalues	11.1 11.1 11.1	base year carbon values in €/tonne (low high central)

MODES

*no.	description
1	Road
2	Bus
3	Rail

VEHICLE_TYPE/SUBMODE

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	<u>fre</u>	OGV1
4	1	N	N	<u>fre</u>	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

PERSON_TYPE

*no.	type(D/P)	description
1	D	Driver
2	P	Passenger

PURPOSE

*no.	type(B/C/O)	description
1	B	Business
2	C	Commuting
3	O	Other

FUEL_TYPE

*no.	sector	name	(sector: 1= <u>untraded</u> sector 2=traded sector)
1	1	petrol	
2	1	diesel	

TIME_PERIODS

*no.	description	comments
1	AM	Hour 8-9
2	IP	<u>Av Hr</u> 12-14

BREAKPOINTS

*description	breakpoint1	breakpoint2	..
Distance	1.0	5.0	10.0 15.0
20.0	50.0	100.0	
TimeSaving	-5.0	-2.0	0.0 2.0 5.0

CHARGES

*no.	sector	description
1	<u>pri</u>	PT fares (private operators)
2	<u>loc</u>	PT fares (LA operated)
3	<u>loc</u>	LA tolls

4	cen	National tolls
5	pri	Private tolls
6	loc	LA on-street parking
7	loc	LA off-street parking
8	pri	Private parking

DISCOUNT_RATE

*% change p.a.

*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

VALUE_OF_TIME

*cents per hour(Percieved Costs)

*Vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..

1	1	2781.0	1308.0	1189.0
1	2	2781.0	1308.0	1189.0
2	1	2781.0	1308.0	1189.0
2	2	2781.0	1308.0	1189.0
3	1	2781.0	0.0	0.0
3	2	2781.0	0.0	0.0
4	1	2781.0	0.0	0.0
4	2	2781.0	0.0	0.0
5	1	2781.0	0.0	0.0
5	2	2781.0	1308.0	1189.0
6	1	2781.0	0.0	0.0
6	2	2781.0	1308.0	1189.0
7	1	2781.0	0.0	0.0
7	2	2781.0	1308.0	1189.0

VALUE_OF_TIME_GROWTH

*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3	..
2010	2010	0.00	-1.00	-1.00	
2011	2011	0.00	1.60	1.60	
2012	2020	2.50	2.00	2.00	
2021	2095	2.00	1.60	1.60	

AV_IND_TAX_CHANGES

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

CHARGE_TAX_RATES

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES_CHANGES

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.0	0.0
2010	2095	2	0.0	0.0
2010	2095	3	0.0	0.0
2010	2095	4	0.0	0.0
2010	2095	5	0.0	0.0
2010	2095	6	0.0	0.0
2010	2095	7	0.0	0.0

FUEL_COST

*type	resource(p/unit)	duty(p/unit)	VAT(%)	carbon_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST_CHANGES

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	Carb_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

CARBDX_VALUE_CHANGES

*relative (%p.a.) or absolute (£p.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high carbon values

*Start_yr	End_yr	Rel.(%) - non-traded	Abs.- non-traded' (£/tonne/year)	Rel.(%) -traded	Abs.(£/tonne/year) - traded
2010	2010	5.000	0.000	0.000	0.000
2011	2011	5.000	0.000	0.000	0.000
2012	2012	7.000	0.000	0.000	0.000
2013	2013	8.000	0.000	0.000	0.000
2014	2014	7.000	0.000	0.000	0.000
2015	2015	117.000	0.000	0.000	0.000
2016	2095	5.000	0.000	0.000	0.000

FLEET

*2009 Split

*veh_type	%petrol	%diesel
1	77.6	22.4
2	15.0	85.0
3	15.0	85.0
4	15.0	85.0
5	0	100.0
6	0	100.0
7	0	100.0

FLEET_CHANGES

*% p.a.

*Start_yr	End_yr	veh_type	%change_petrol
2009	2009	1	-2.40

2010	2010	1	-2.40
2011	2025	1	-1.27
2026	2040	1	0.00

FUEL_CONSUMPTION

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	
cut-off_speed(km/h)						
1	1	0.1605	-0.00269	0.182333E-04	0.000000E+00	140
1	2	0.1605	-0.00269	0.182333E-04	0.000000E+00	140
2	1	0.2177	-0.00352	0.282586E-04	0.000000E+00	140
2	2	0.2177	-0.00352	0.282586E-04	0.000000E+00	140
3	1	0.4448	-0.00718	0.521836E-04	0.000000E+00	96
3	2	0.4448	-0.00718	0.521836E-04	0.000000E+00	96
5	2	4.1156	0.30646	-0.420643E-02	0.365263E-04	96

FUEL_EFFICIENCY

*% p.a.

*Start_yr End_yr veh_type fuel_type change

2010	2024	1	1	-2.00
2010	2024	1	2	-2.00
2025	2095	1	1	0.00
2025	2095	1	2	0.00
2010	2095	2	1	0.00
2010	2095	2	2	0.00
2010	2095	3	1	0.00
2010	2095	3	2	0.00
2010	2024	5	1	-2.00
2010	2024	5	2	-2.00

NON_FUEL_VOC

*veh_type fuel_type a_nonfuel_wrk b_nonfuel_wrk a_nonfuel_nw b_nonfuel_nw

1	1	6.388	36.783	6.388	36.783
2	1	11.413	65.599	0.000	0.000
3	1	10.623	417.431	0.000	0.000
4	1	20.666	804.625	0.000	0.000
5	1	48.198	1098.877	0.000	0.000
6	1	0.000	0.000	0.000	0.000
7	1	48.198	1098.877	0.000	0.000
1	2	6.388	36.783	6.388	36.783
2	2	11.413	65.599	0.000	0.000
3	2	10.623	417.431	0.000	0.000
4	2	20.666	804.625	0.000	0.000
5	2	48.198	1098.877	0.000	0.000
6	2	0.000	0.000	0.000	0.000
7	2	48.198	1098.877	0.000	0.000

NON_FUEL_VOC_CHANGES

*% p.a.

*Start_yr	End_yr	veh_type	gnf
2009	2080	1	0.000
2009	2080	2	0.000
2009	2080	3	0.000
2009	2080	4	0.000
2009	2080	5	0.000

NON_FUEL_TAX_RATES

*%

*submode final intermediate

1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES_CHANGES

*% change p.a.

*Start_yr	End_yr	Submode	final	intermediate
2010	2010	1	5.0	6.5
2011	2080	1	0.0	0.0
2010	2010	2	7.9	10.3
2011	2080	2	0.0	0.0
2010	2010	3	7.9	10.3
2011	2080	3	0.0	0.0
2010	2010	4	7.9	10.3
2011	2080	4	0.0	0.0
2010	2010	5	7.9	10.3
2011	2080	5	0.0	0.0
2010	2010	6	7.9	10.3
2011	2080	6	0.0	0.0
2010	2010	7	0.0	0.0
2011	2080	7	0.0	0.0

DEFAULT_PURPOSE_SPLIT

*Vtype/submode	purpose	Period1	Period2
1	1	12.0	10.3
1	2	42.9	42.2
1	3	45.1	47.5
2	1	40.2	50.3
2	2	45.1	35.1
2	3	14.7	14.6
3	1	75.6	81.3
3	2	17.0	11.1
3	3	7.4	7.6
4	1	79.7	86.9
4	2	13.2	7.8
4	3	7.1	5.3
5	1	10.2	10.2
5	2	18.9	18.9
5	3	70.8	70.8
6	1	10.2	10.2
6	2	18.9	18.9
6	3	70.8	70.8
7	1	10.2	10.2
7	2	18.9	18.9
7	3	70.8	70.8

DEFAULT_PERSON_FACTORS

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2
1	1	1	1	1
1	1	2	0.26	0.24
1	2	1	1	1
1	2	2	0.23	0.21
1	3	1	1	1

1	3	2	0.68	0.64
2	1	1	1	1
2	1	2	0.38	0.36
2	2	1	1	1
2	2	2	0.40	0.40
2	3	1	1	1
2	3	2	0.48	0.47
3	1	1	1	1
3	1	2	0.09	0.09
3	2	1	1	1
3	2	2	0.24	0.25
3	3	1	1	1
3	3	2	0.27	0.29
4	1	1	1	1
4	1	2	0.03	0.03
4	2	1	1	1
4	2	2	0.08	0.11
4	3	1	1	1
4	3	2	0.16	0.13
5	1	1	1	1
5	1	2	0.35	0.35
5	2	1	1	1
5	2	2	1.50	1.50
5	3	1	1	1
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS_CHANGE

*% change p.a.

*Start_yr	End_yr	Submode	Purpose	Person_type	ChangePer1	ChangePer2
2009	2036	1	1	2	0.00	0.0
2009	2036	1	2	2	0.00	0.0
2009	2036	1	3	2	0.00	0.0

PREPARATION&SUPERVISION

* total preparation (by stage) and supervision costs as % of land and construction costs

*Mode	*Prep:SI	Prep:PC	Prep:PR	Prep:OP	Prep: WC	Super
1	12.0	9.0	9.0	6.0	2.0	5.0
2	12.0	9.0	9.0	6.0	2.0	5.0

APPENDIX C: SCHEME COSTS

ESTIMATE			OPTION COMPARISON ESTIMATES (PHASE 2)						
<i>Inflation Factor Non Land Costs</i>	0.95	Land	0.95						
Scheme Name	N6 Galway City Transport Project			NRA Ref.	GC/14/11222				
Road Authority	Galway County Council			Phase	Phase 2	X-Sec	Varies		
Possible Mid-Construction Date	2018	<i>Current Year</i>	2015	<i>Inflation-Construction</i>	2%	<i>Inflation Land & Property</i>	3%	<i>% Prog. Risk</i>	10%
Route Option Number / Reference	Red	Orange	Yellow	Blue	Pink	Green	EPRC		
Mainline Length	15.07	14.88	17.21	15.66	15.66	20.16	16.35		
Grade Separated Junctions	7	5	5	4	4	4	4		
Cut and Cover Tunnel Km	1.8	0.5	0.5	1.1	0.95	0.85	0.95		
Viaduct Km	1.2	0	0.8	0.4	0.4	0.9	0.95		
Bored Tunnel Km	0	3.5	0	0	0	0	0		
Roadheader Tunnel Km	0	0	0	0.5	0.5	0	0.5		
Widening and Parallel Road Km	4.3	2.3	2.3	0	0	0	0		
River Corrib Crossing Km	0.14	0	0.25	0.25	0.25	0.55	0.25		
ROUTE OPTIONS COSTS									
BASE COSTS (Incl VAT & Project Specific Risk Contingencies) - €million									
Main Contract Construction	413.7	687.0	249.6	293.0	298.2	265.6	311.7		
Main Contract Supervision	9.1	9.0	8.5	7.8	7.8	7.8	9.9		
Archaeology	2.6	3.4	4.2	4.7	4.2	5.2	3.7		
Advance Works & Other Contracts	31.2	23.2	29.7	18.2	17.6	14.6	17.9		
Residual Network	3.3	3.3	3.8	3.5	3.4	4.4	3.6		
Land & Property	245.1	124.0	132.2	174.0	160.4	203.8	161.7		
Planning & Design	9.1	9.0	8.5	7.8	7.8	7.8	9.9		
Subtotal	714.1	858.9	436.4	508.8	499.3	509.1	518.4		
<i>Total Inflation Allowance</i>	48.9	53.7	29.3	34.8	33.8	35.7	35.0		
<i>NRA Programme Risk</i>	71.4	85.9	43.6	50.9	49.9	50.9	51.8		
Option Comparison Estimate	834.34	998.48	509.38	594.50	583.07	595.73	605.23		
Signatures	Regional Manager			Head of Major Projects					

N6 GCTP Maintenance Cost Calculations

PAG 6.11

Road Type	Annual Cost (€'0000 per km, 2009)	Annual Cost (€'0000 per km, 2015)
Standard 2-lane with H/S	18.327	19.0802
2+1 with central reserve	30.023	31.2568
2+1 without central reserve	18.327	19.0802
Dual Carriageway/Motorway	41.718	43.4324

From Arup

Element	Annual Cost (€'0000 per km, 2015)
Bored Tunnel	1,656.521
C&C Tunnel	971.143
RH Tunnel	628.571

Cost Calculations for TUBA

Route Option	Single	Dual	Bored Tunnel	C&C Tunnel	RH Tunnel	Annual Total (2015)	For TUBA (2015)
Orange	44.8	370.5	5,797.8	485.6	0.0	6,698.7	240,074.5
Green	78.2	597.6	0.0	825.5	0.0	1,501.3	53,806.0
Yellow	82.0	469.5	0.0	485.6	0.0	1,037.1	37,169.3
Blue	45.8	454.3	0.0	1,068.3	314.3	1,882.6	67,471.7
Pink	40.1	473.8	0.0	922.6	314.3	1,750.8	62,746.3
Red	49.6	405.2	0.0	1,748.1	0.0	2,202.9	78,949.2
EPRC	108.4	348.3	0.0	922.6	314.3	1,693.6	60,695.9

APPENDIX D: TUBA SCHEME INPUT FILES

Yellow Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Yellow_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
-------	-----------------------	------------	-------

DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
-------	------	---------	------	-------	-----

DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
-------	------	--------	-------	-------	--------	--------	-----	--------	------

DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
-------	------	----------	-----------	-------	---------

SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	254649.6	F	124.3
L	1	cen	157006.2	F	124.3
P	1	cen	46280.2	F	124.3
S	1	cen	8022.3	F	124.3
M	1	cen	37169.3	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			
2031	1	0.0	0.0	0.0	0.0	3.2			

Yellow Route Option - 60 year

2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.
 *Start_yr End_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC7.txt

Yellow Route Option - 60 year

22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\DISTANCE_UCA.txt

Yellow Route Option - 60 year

```
SECTORS
*mode  Sector_file_name
1  C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv
```

Blue Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Blue_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	298975.5	F	124.3
S	1	cen	7306.7	F	124.3
L	1	cen	206739.7	F	124.3
P	1	cen	33942.3	F	124.3
M	1	cen	67471.7	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Blue Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC5.txt

Blue Route Option - 30 year

20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\DISTANCE_UCA.txt

Blue Route Option - 30 year

72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\DISTANCE_UCA.txt
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SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Blue Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Blue_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	298975.5	F	124.3
S	1	cen	7306.7	F	124.3
L	1	cen	206739.7	F	124.3
P	1	cen	33942.3	F	124.3
M	1	cen	67471.7	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			

Blue Route Option - 60 year

2028	1	0.0	0.0	0.0	0.0	3.1
2029	1	0.0	0.0	0.0	0.0	3.2
2030	1	0.0	0.0	0.0	0.0	3.2
2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt

Blue Route Option - 60 year

15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Blue2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt

Blue Route Option - 60 year

66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Blue2034\DISTANCE_UCA.txt

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Green Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Green_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	271016.7	F	124.3
L	1	cen	242097.2	F	124.3
P	1	cen	31806.3	F	124.3
S	1	cen	7306.7	F	124.3
M	1	cen	53806.0	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Green Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.
 *Start_yr End_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC7.txt

Green Route Option - 30 year

22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\DISTANCE_UCA.txt

Green Route Option - 30 year

```
SECTORS
*mode  Sector_file_name
1  C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv
```

Green Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Green_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
-------	------	---------	------	-------	-----

DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	271016.7	F	124.3
L	1	cen	242097.2	F	124.3
P	1	cen	31806.3	F	124.3
S	1	cen	7306.7	F	124.3
M	1	cen	53806.0	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Green Route Option - 60 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.
 *Start_yr End_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\Rd_Demand_AM_UC7.txt

Green Route Option - 60 year

22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Green2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Green2034\DISTANCE_UCA.txt

Green Route Option - 60 year

```
SECTORS
*mode Sector_file_name
1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv
```

Orange Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Orange_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
-------	------	---------	------	-------	-----

DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
-------	------	--------	-------	-------	--------	--------	-----	--------	------

DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
-------	------	----------	-----------	-------	---------

SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	701031.3	F	124.3
L	1	cen	147358.9	F	124.3
P	1	cen	38822.6	F	124.3
S	1	cen	8474.3	F	124.3
M	1	cen	240074.5	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Orange Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC6.txt

Orange Route Option - 30 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\DISTANCE_UCA.txt

Orange Route Option - 30 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Orange Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Orange_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
-------	------	---------	------	-------	-----

DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	701031.3	F	124.3
L	1	cen	147358.9	F	124.3
P	1	cen	38822.6	F	124.3
S	1	cen	8474.3	F	124.3
M	1	cen	240074.5	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Orange Route Option - 60 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC6.txt

Orange Route Option - 60 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Orange2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Orange2034\DISTANCE_UCA.txt

Orange Route Option - 60 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Pink Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Pink_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	304312.2	F	124.3
L	1	cen	190546.0	F	124.3
P	1	cen	32830.5	F	124.3
S	1	cen	7297.3	F	124.3
M	1	cen	62746.3	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Pink Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC6.txt

Pink Route Option - 30 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\DISTANCE_UCA.txt

Pink Route Option - 30 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Pink Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Pink_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	304312.2	F	124.3
L	1	cen	190546.0	F	124.3
P	1	cen	32830.5	F	124.3
S	1	cen	7297.3	F	124.3
M	1	cen	62746.3	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Pink Route Option - 60 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC6.txt

Pink Route Option - 60 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Pink2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Pink2034\DISTANCE_UCA.txt

Pink Route Option - 60 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Red Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Red_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	422126.9	F	124.3
S	1	cen	8587.2	F	124.3
L	1	cen	291153.5	F	124.3
P	1	cen	46316.5	F	124.3
M	1	cen	78949.2	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Red Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC6.txt

Red Route Option - 30 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\DISTANCE_UCA.txt

Red Route Option - 30 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Red Route Option - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Red_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	422126.9	F	124.3
S	1	cen	8587.2	F	124.3
L	1	cen	291153.5	F	124.3
P	1	cen	46316.5	F	124.3
M	1	cen	78949.2	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			
2031	1	0.0	0.0	0.0	0.0	3.2			

Red Route Option - 60 year

2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.
 *Start_yr End_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\Rd_Demand_AM_UC7.txt

Red Route Option - 60 year

22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Red2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Red2034\DISTANCE_UCA.txt

Red Route Option - 60 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

Yellow Route Option - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name Yellow_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	254649.6	F	124.3
L	1	cen	157006.2	F	124.3
P	1	cen	46280.2	F	124.3
S	1	cen	8022.3	F	124.3
M	1	cen	37169.3	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

Yellow Route Option - 30 year

2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC5.txt
20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC6.txt

Yellow Route Option - 30 year

21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\Yellow2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\Yellow2034\DISTANCE_UCA.txt

Yellow Route Option - 30 year

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

EPRC - 30 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name EPRC_Option
 first_yr 2019
 horizon_yr 2049
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	318056.9	F	124.3
S	1	cen	9321.7	F	124.3
L	1	cen	192114.3	F	124.3
P	1	cen	34884.0	F	124.3
M	1	cen	60695.9	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			

EPRC - 30 year

2028	1	0.0	0.0	0.0	0.0	3.1
2029	1	0.0	0.0	0.0	0.0	3.2
2030	1	0.0	0.0	0.0	0.0	3.2
2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt

EPRC - 30 year

66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\DISTANCE_UCA.txt
72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\DISTANCE_UCA.txt

SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv

EPRC - 60 year

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA_version 1.9.4
 run_name GCOB
 do_min_name Do Min
 do_som_name EPRC_Option
 first_yr 2019
 horizon_yr 2079
 modelled_yrs 2019 2034
 detail Yes
 current_yr 2019
 print_warn 5
 P&R_car_speed 65.0
 zones_as_sectors No

TIME_SLICES

*no.	duration(min)	annualisation	period	description
1	60	1291	1	0800-0900
2	60	3808	1	1000-1100

SCHEMES_DM

*Mode	1st Construction year	Opening_yr	Stage
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DO_MIN_COSTS

*Type	Mode	Funding	Cost	Price	GDP
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DO_MIN_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
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DO_MIN_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
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SCHEMES_DS

*Mode	1st Construction year	Opening_yr	Stage
1	2018	2019	OP
2	2018	2019	OP

DO_SOM_COSTS

*Type	Mode	Funding	Cost	Price	GDP
C	1	cen	318056.9	F	124.3
S	1	cen	9321.7	F	124.3
L	1	cen	192114.3	F	124.3
P	1	cen	34884.0	F	124.3
M	1	cen	60695.9	F	124.3

DO_SOM_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2019	1	100.0	100.0	100.0	100.0	2.9			
2020	1	0.0	0.0	0.0	0.0	2.9			
2021	1	0.0	0.0	0.0	0.0	2.9			
2022	1	0.0	0.0	0.0	0.0	3.0			
2023	1	0.0	0.0	0.0	0.0	3.0			
2024	1	0.0	0.0	0.0	0.0	3.0			
2025	1	0.0	0.0	0.0	0.0	3.1			
2026	1	0.0	0.0	0.0	0.0	3.1			
2027	1	0.0	0.0	0.0	0.0	3.1			
2028	1	0.0	0.0	0.0	0.0	3.1			
2029	1	0.0	0.0	0.0	0.0	3.2			
2030	1	0.0	0.0	0.0	0.0	3.2			

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2031	1	0.0	0.0	0.0	0.0	3.2
2032	1	0.0	0.0	0.0	0.0	3.3
2033	1	0.0	0.0	0.0	0.0	3.3
2034	1	0.0	0.0	0.0	0.0	3.3
2035	1	0.0	0.0	0.0	0.0	3.4
2036	1	0.0	0.0	0.0	0.0	3.4
2037	1	0.0	0.0	0.0	0.0	3.4
2038	1	0.0	0.0	0.0	0.0	3.5
2039	1	0.0	0.0	0.0	0.0	3.5
2040	1	0.0	0.0	0.0	0.0	3.5
2041	1	0.0	0.0	0.0	0.0	3.6
2042	1	0.0	0.0	0.0	0.0	3.6
2043	1	0.0	0.0	0.0	0.0	3.7
2044	1	0.0	0.0	0.0	0.0	3.7
2045	1	0.0	0.0	0.0	0.0	3.7
2046	1	0.0	0.0	0.0	0.0	3.8
2047	1	0.0	0.0	0.0	0.0	3.8
2048	1	0.0	0.0	0.0	0.0	3.8

DO_SOM_DELAY_COSTS

*Year	Mode	Business	Commuting	Other	Freight
* 2013	1	25.0	100.0	0.0	25.0
* 2014	1	50.0	200.0	0.0	50.0
* 2015	1	25.0	100.0	0.0	25.0

BENEFIT_CHANGE

*% change p.a.	*Start_yr	End_yr	Submode	ChangePer1	ChangePer2	ChangePer3	ChangePer4	ChangePer5

USER_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	2	0
2	1	2	0
3	1	1	0
4	1	3	0
5	2	0	0
6	3	0	0
7	4	0	0

INPUT_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC1.txt
2	2	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC2.txt
3	3	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC3.txt
4	4	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC4.txt
5	5	1	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC5.txt
6	6	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC6.txt
7	7	1	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\Rd_Demand_AM_UC7.txt
8	1	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC1.txt
9	2	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC2.txt
10	3	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC3.txt
11	4	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC4.txt
12	5	1	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC5.txt
13	6	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC6.txt
14	7	1	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\Rd_Demand_AM_UC7.txt
15	1	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC1.txt
16	2	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC2.txt
17	3	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC3.txt
18	4	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC4.txt
19	5	1	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC5.txt

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20	6	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC6.txt
21	7	1	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\Rd_Demand_AM_UC7.txt
22	1	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC1.txt
23	2	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC2.txt
24	3	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC3.txt
25	4	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC4.txt
26	5	1	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC5.txt
27	6	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC6.txt
28	7	1	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\Rd_Demand_AM_UC7.txt
29	1-7	1	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\TIME_UCA.txt
30	1-7	1	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\TIME_UCA.txt
31	1-7	1	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\TIME_UCA.txt
32	1-7	1	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\TIME_UCA.txt
33	1-7	1	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\AM\DISTANCE_UCA.txt
34	1-7	1	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\AM\DISTANCE_UCA.txt
35	1-7	1	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2019\DISTANCE_UCA.txt
36	1-7	1	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\AM\EPRC2034\DISTANCE_UCA.txt
37	1	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC1.txt
38	2	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC2.txt
39	3	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC3.txt
40	4	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC4.txt
41	5	2	V	1	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC5.txt
42	6	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC6.txt
43	7	2	V	1	0	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\Rd_Demand_IP_UC7.txt
44	1	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC1.txt
45	2	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC2.txt
46	3	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC3.txt
47	4	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC4.txt
48	5	2	V	1	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC5.txt
49	6	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC6.txt
50	7	2	V	1	0	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\Rd_Demand_IP_UC7.txt
51	1	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC1.txt
52	2	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC2.txt
53	3	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC3.txt
54	4	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC4.txt
55	5	2	V	1	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC5.txt
56	6	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC6.txt
57	7	2	V	1	1	2019	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\Rd_Demand_IP_UC7.txt
58	1	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC1.txt
59	2	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC2.txt
60	3	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC3.txt
61	4	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC4.txt
62	5	2	V	1	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC5.txt
63	6	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC6.txt
64	7	2	V	1	1	2034	0.52632	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\Rd_Demand_IP_UC7.txt
65	1-7	2	T	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\TIME_UCA.txt
66	1-7	2	T	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\TIME_UCA.txt
67	1-7	2	T	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\TIME_UCA.txt
68	1-7	2	T	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\TIME_UCA.txt
69	1-7	2	D	3	0	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2019\IP\DISTANCE_UCA.txt
70	1-7	2	D	3	0	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DM\2034\IP\DISTANCE_UCA.txt
71	1-7	2	D	3	1	2019	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2019\DISTANCE_UCA.txt

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72	1-7	2	D	3	1	2034	1.00000	C:\Artitz\GCOB\TUBA\Inputs\ModelOutputs\DS\IP\EPRC2034\DISTANCE_UCA.txt
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SECTORS

*mode Sector_file_name

1 C:\Artitz\GCOB\TUBA\Inputs\Sectors\GCOB_16_Sectors.csv



APPENDIX E: TUBA OUTPUT FILES

Yellow Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:47:21

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 133431 Warnings found

Warning (48 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
127	126	1	Car	Business	All	2034	0.052	0.172	0.299	0.005	0.002
127	126	1	LGV	Business	All	2034	0.052	0.172	0.299	0.044	0.044
127	126	1	LGV	Commuting	All	2034	0.052	0.172	0.299	0.044	0.044
127	126	1	Car	Other	All	2034	0.052	0.172	0.299	0.020	0.007
127	126	1	Car	Commuting	All	2034	0.052	0.172	0.299	0.014	0.007

Displayed 5 warnings of a total of 4961 of this type.

Warning (123 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Other	All	2019	0.227	0.048	4.780	0.004	0.004
79	8	1	OGV2	Commuting	All	2019	0.227	0.048	4.780	0.004	0.004
79	8	1	OGV2	Business	All	2019	0.227	0.048	4.780	0.004	0.004

Yellow Route Option - 60 year

79	8	1	OGV1	Other	All	2019	0.226	0.048	4.755	0.004	0.004
79	8	1	OGV1	Commuting	All	2019	0.226	0.048	4.755	0.004	0.004

Displayed 5 warnings of a total of 92690 of this type.

Warning (173 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
127	126	1	LGV	Business	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	LGV	Commuting	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	LGV	Other	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	Car	Commuting	All	2034	0.776	3.050	0.254	0.014	0.007
127	126	2	Car	Commuting	All	2034	0.776	3.050	0.254	0.001	0.000

Displayed 5 warnings of a total of 31360 of this type.

Warning (3906 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.030
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.031
73	8	1	Car	Other	All	2034	5.299	1.350	3.925	0.048	0.075
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3906 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.056	4.766	0.091
10	6	2	Car	Other	All	2034	0.265	0.056	4.766	1.349
10	6	2	Car	Business	All	2034	0.265	0.056	4.766	0.933
10	6	2	LGV	Business	All	2034	0.265	0.056	4.766	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.056	4.766	0.417

Displayed 5 warnings of a total of 61 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.026

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Yellow Route Option - 60 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour

*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Yellow Route Option - 60 year

```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```


Yellow Route Option - 60 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Yellow Route Option - 60 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

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2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Yellow Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Yellow Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Yellow Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Yellow Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Yellow Route Option - 60 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0

```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2010        2010     1           5.0      6.5
2011        2080     1           0.0      0.0
2010        2010     2           7.9     10.3
2011        2080     2           0.0      0.0
2010        2010     3           7.9     10.3
2011        2080     3           0.0      0.0
2010        2010     4           7.9     10.3
2011        2080     4           0.0      0.0
2010        2010     5           7.9     10.3
2011        2080     5           0.0      0.0
2010        2010     6           7.9     10.3
2011        2080     6           0.0      0.0
2010        2010     7           0.0      0.0
2011        2080     7           0.0      0.0

```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2011        2011     1          14.3      0.0
2011        2011     2          14.3      0.0
2011        2011     3          14.3      0.0
2011        2011     4          14.3      0.0
2011        2011     5          14.3      0.0
2011        2011     6          14.3      0.0
2011        2011     7           0.0      0.0
2011        2011     8           0.0      0.0
2012        2100     1           0.0      0.0
2012        2100     2           0.0      0.0
2012        2100     3           0.0      0.0
2012        2100     4           0.0      0.0
2012        2100     5           0.0      0.0
2012        2100     6           0.0      0.0
2012        2100     7           0.0      0.0
2012        2100     8           0.0      0.0

```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8

```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2

```

Yellow Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Yellow Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	364590	364590
Road	2020	0	809	809
Road	2021	0	778	778
Road	2022	0	774	774
Road	2023	0	744	744
Road	2024	0	715	715
Road	2025	0	711	711
Road	2026	0	684	684
Road	2027	0	657	657
Road	2028	0	632	632
Road	2029	0	627	627
Road	2030	0	603	603
Road	2031	0	580	580
Road	2032	0	575	575
Road	2033	0	553	553
Road	2034	0	532	532
Road	2035	0	527	527
Road	2036	0	506	506
Road	2037	0	487	487
Road	2038	0	482	482
Road	2039	0	463	463
Road	2040	0	446	446
Road	2041	0	441	441
Road	2042	0	424	424
Road	2043	0	419	419
Road	2044	0	403	403
Road	2045	0	387	387
Road	2046	0	382	382
Road	2047	0	368	368
Road	2048	0	354	354
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Yellow Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	380653	380653
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112533
Car	2019	All	113832	112533
Car	2034	AM Hour 8-9	127298	125746
Car	2034	All	127298	125746
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127860
All	2019	All	129159	127860
All	2034	AM Hour 8-9	144161	142608
All	2034	All	144161	142608

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	981015	0	4574	210831
Road	2034	820412	0	3541	128265	798242	0	3334	130394

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3497	1160
Car	2034	4630	1659	4344	1556
LGV	2019	85	480	82	465
LGV	2034	97	549	93	524
OGV1	2019	53	302	52	297
OGV1	2034	59	332	57	323
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3632	1922
All	2034	4785	2539	4494	2404
Car	Total	276503	98698	259685	92693
LGV	Total	5808	32910	5561	31515
OGV1	Total	3529	20000	3439	19488
OGV2	Total	0	0	0	0
All	Total	285839	151607	268686	143695

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3027	-174	86	82	-5	24	23	-1	24	23	-1
Car	2034	4095	3842	-252	127	120	-8	17	16	-1	17	16	-1
LGV	2019	397	385	-13	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	434	-20	14	14	-1	2	2	-0	2	2	-0
OGV1	2019	250	245	-5	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	267	-7	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3657	-192	104	99	-5	29	27	-1	29	27	-1
All	2020	3953	3754	-199	108	102	-5	29	27	-1	29	27	-1
All	2021	4061	3853	-208	112	106	-6	28	27	-1	28	27	-1
All	2022	4171	3955	-216	116	110	-6	28	26	-1	28	26	-1

Yellow Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3657	-192	104	99	-5	29	27	-1	29	27	-1
AM Hour 8-9	2034	4824	4544	-280	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	271670	-16439	10560	9955	-605	815	770	-46	815	770	-46

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Yellow Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_pri	Fuel	Non_fuel	PT_fares_pri
						Taxes
Road	2019	33313	0	287	-2352	0
Road	2020	33586	0	290	-2342	0
Road	2021	33698	0	293	-2330	0
Road	2022	33788	0	295	-2315	0
Road	2023	33859	0	298	-2298	0
Road	2024	33910	0	300	-2278	0
Road	2025	33943	0	297	-2257	0
Road	2026	33958	0	293	-2234	0
Road	2027	33955	0	290	-2210	0
Road	2028	33937	0	286	-2184	0
Road	2029	33903	0	283	-2156	0
Road	2030	33854	0	279	-2128	0
Road	2031	33791	0	274	-2099	0
Road	2032	33714	0	268	-2068	0
Road	2033	33625	0	263	-2037	0
Road	2034	33523	0	258	-2006	0
Road	2035	32783	0	248	-1929	0
Road	2036	32059	0	238	-1854	0
Road	2037	31351	0	229	-1783	0
Road	2038	30658	0	220	-1714	0
Road	2039	29982	0	212	-1649	0
Road	2040	29320	0	204	-1585	0
Road	2041	28672	0	196	-1524	0
Road	2042	28040	0	188	-1466	0
Road	2043	27421	0	181	-1409	0
Road	2044	26816	0	174	-1355	0
Road	2045	26224	0	168	-1303	0
Road	2046	25646	0	161	-1253	0
Road	2047	25080	0	155	-1205	0
Road	2048	24527	0	149	-1158	0
Road	2049	23986	0	143	-1114	0
Road	2050	23457	0	138	-1071	0
Road	2051	22940	0	132	-1030	0
Road	2052	22435	0	127	-990	0
Road	2053	21940	0	122	-952	0
Road	2054	21457	0	118	-915	0
Road	2055	20984	0	113	-880	0
Road	2056	20522	0	109	-846	0
Road	2057	20070	0	105	-814	0
Road	2058	19628	0	101	-782	0
Road	2059	19196	0	97	-752	0
Road	2060	18773	0	93	-723	0
Road	2061	18360	0	89	-696	0
Road	2062	17956	0	86	-669	0
Road	2063	17561	0	83	-643	0
Road	2064	17174	0	80	-618	0
Road	2065	16796	0	76	-595	0
Road	2066	16427	0	74	-572	0
Road	2067	16065	0	71	-550	0
Road	2068	15712	0	68	-529	0
Road	2069	15367	0	65	-508	0
Road	2070	15029	0	63	-489	0
Road	2071	14698	0	60	-470	0
Road	2072	14375	0	58	-452	0
Road	2073	14059	0	56	-434	0
Road	2074	13750	0	54	-418	0
Road	2075	13448	0	52	-402	0
Road	2076	13153	0	50	-386	0
Road	2077	12864	0	48	-371	0
Road	2078	12582	0	46	-357	0
Road	2079	12297	0	46	-357	0
Road	Total	1482499	0	9899	-76866	0

Yellow Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	29632	0	268	-2473	0	-53
Car	2034	29300	0	240	-2074	0	-40
LGV	2019	2683	0	14	-22	0	-7
LGV	2034	3067	0	13	-50	0	-6
OGV1	2019	507	0	5	45	0	-2
OGV1	2034	586	0	5	36	0	-2
OGV2	2019	491	0	0	98	0	0
OGV2	2034	570	0	0	82	0	0
All	2019	33313	0	287	-2352	0	-63
All	2034	33523	0	258	-2006	0	-48
Car	Total	1295069	0	9232	-79753	0	-1608
LGV	Total	135574	0	490	-1670	0	-230
OGV1	Total	26301	0	178	1388	0	-83
OGV2	Total	25556	0	0	3168	0	0
All	Total	1482499	0	9899	-76866	0	-1922

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2019	33313	0	287	-2352	0	-63
All	2034	33523	0	258	-2006	0	-48
All	Total	1482499	0	9899	-76866	0	-1922

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2019	7838	0	27	-113	0	-12
Business	2034	8598	0	26	-100	0	-11
Commuting	2019	19434	0	207	-995	0	-67
Commuting	2034	17959	0	175	-841	0	-50
Other	2019	6041	0	53	-1244	0	17
Other	2034	6966	0	57	-1065	0	13
Business	Total	388791	0	982	-3805	0	-414
Commuting	Total	795827	0	6813	-32278	0	-2015
Other	Total	297882	0	2104	-40783	0	507

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM Hour 8-9	2019	33313	0	287	-2352	0	-63
AM Hour 8-9	2034	33523	0	258	-2006	0	-48
AM Hour 8-9	Total	1482499	0	9899	-76866	0	-1922

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-6	-10	-15	40	58	122
Car	Business	2034	-4	-9	-13	52	73	167
Car	Business	Total	-244	-572	-797	3059	4332	9829
Car	Commuting	2019	-21	-40	-61	243	556	1118
Car	Commuting	2034	-13	-34	-57	280	657	1495
Car	Commuting	Total	-879	-2108	-3512	16777	39255	88172
Car	Other	2019	-37	-60	-125	258	270	307
Car	Other	2034	-21	-59	-93	395	359	421
Car	Other	Total	-1396	-3624	-5941	23016	21182	24789
LGV	Business	2019	-7	-7	-10	25	28	34
LGV	Business	2034	-5	-7	-7	34	35	48
LGV	Business	Total	-315	-424	-472	1986	2062	2827
LGV	Commuting	2019	-8	-8	-11	28	31	38
LGV	Commuting	2034	-6	-8	-8	38	40	55
LGV	Commuting	Total	-358	-483	-537	2261	2347	3218
LGV	Other	2019	-3	-3	-4	10	11	13
LGV	Other	2034	-2	-3	-3	13	14	19
LGV	Other	Total	-123	-166	-185	779	809	1109
OGV1	Business	2019	-2	-3	-2	6	8	12
OGV1	Business	2034	-2	-3	-2	8	10	17
OGV1	Business	Total	-99	-160	-136	444	620	997
OGV1	Commuting	2019	-0	-1	-1	1	2	3

Yellow Route Option - 60 year

OGV1	Commuting	2034	-0	-1	-1	2	3	4
OGV1	Commuting	Total	-25	-41	-35	114	159	255
OGV1	Other	2019	-0	-0	-0	1	1	1
OGV1	Other	2034	-0	-0	-0	1	1	2
OGV1	Other	Total	-11	-18	-16	51	71	114
OGV2	Business	2019	-2	-2	-3	6	8	12
OGV2	Business	2034	-2	-3	-2	7	10	16
OGV2	Business	Total	-105	-156	-140	439	614	967
OGV2	Commuting	2019	-0	-0	-0	1	1	2
OGV2	Commuting	2034	-0	-0	-0	1	2	3
OGV2	Commuting	Total	-18	-27	-24	76	107	168
OGV2	Other	2019	-0	-0	-0	1	1	1
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-11	-16	-14	44	62	97

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-169	-272	-417	1085	1591	3315
Car	Business	2034	-75	-190	-261	1059	1493	3421
Car	Business	Total	-4130	-9323	-13104	48752	69211	156143
Car	Commuting	2019	-216	-420	-632	2531	5788	11639
Car	Commuting	2034	-99	-248	-421	2061	4837	11011
Car	Commuting	Total	-5179	-12086	-19915	93518	218366	485950
Car	Other	2019	-346	-564	-1186	2443	2558	2904
Car	Other	2034	-139	-398	-624	2647	2403	2822
Car	Other	Total	-7588	-18588	-31341	114249	106175	123958
LGV	Business	2019	-180	-201	-262	676	753	922
LGV	Business	2034	-101	-141	-153	691	711	988
LGV	Business	Total	-5220	-6910	-7802	31570	32927	44819
LGV	Commuting	2019	-78	-88	-114	294	328	401
LGV	Commuting	2034	-41	-58	-62	283	291	404
LGV	Commuting	Total	-2077	-2739	-3103	12444	12992	17655
LGV	Other	2019	-24	-27	-36	92	103	126
LGV	Other	2034	-13	-18	-20	89	91	127
LGV	Other	Total	-651	-858	-972	3898	4069	5530
OGV1	Business	2019	-51	-72	-67	150	230	317
OGV1	Business	2034	-32	-54	-45	155	214	349
OGV1	Business	Total	-1629	-2594	-2228	7060	9915	15776
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-51	-66	-76	155	214	316
OGV2	Business	2034	-35	-53	-46	152	213	338
OGV2	Business	Total	-1717	-2511	-2315	6994	9778	15327
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-172	-274	-422	1014	1515	3256
Car	Business	2034	-77	-191	-263	1014	1440	3374
Car	Business	Total	-4214	-9359	-13219	46912	67076	154316
Car	Commuting	2019	-209	-356	-69	3594	5870	9066
Car	Commuting	2034	-97	-222	-53	2930	4869	9042
Car	Commuting	Total	-5060	-10876	-4934	127134	219912	408759
Car	Other	2019	-331	-511	-814	2611	1778	1882
Car	Other	2034	-130	-368	-360	2672	1829	2056
Car	Other	Total	-7198	-17318	-20809	116148	83481	93796
LGV	Business	2019	-188	-206	-264	690	757	903
LGV	Business	2034	-106	-143	-157	693	695	968
LGV	Business	Total	-5418	-6993	-7961	31748	32450	44084
LGV	Commuting	2019	-79	-88	-115	297	330	404
LGV	Commuting	2034	-42	-58	-63	285	293	407
LGV	Commuting	Total	-2091	-2759	-3124	12534	13073	17762
LGV	Other	2019	-25	-28	-36	93	104	127
LGV	Other	2034	-13	-18	-20	89	92	128
LGV	Other	Total	-655	-864	-979	3927	4096	5565

Yellow Route Option - 60 year

OGV1	Business	2019	-59	-80	-75	168	258	345
OGV1	Business	2034	-36	-60	-49	169	230	371
OGV1	Business	Total	-1792	-2833	-2416	7628	10612	16623
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	0
OGV1	Commuting	Total	-2	-3	-3	9	12	18
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-1	-1	-1	4	5	8
OGV2	Business	2019	-67	-84	-91	192	269	370
OGV2	Business	2034	-42	-64	-54	180	251	381
OGV2	Business	Total	-2033	-2968	-2674	8096	11300	17004
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	4	24	25	15	49	41	30
Car	Business	2034	1	15	37	33	20	66	57	39
Car	Business	Total	36	816	2133	1923	1156	3909	3338	2297
Car	Commuting	2019	4	289	423	243	117	398	173	148
Car	Commuting	2034	3	356	531	313	143	537	248	198
Car	Commuting	Total	186	21177	31509	18517	8520	31618	14507	11671
Car	Other	2019	5	35	101	86	46	133	149	59
Car	Other	2034	9	150	162	122	67	204	216	71
Car	Other	Total	527	8247	9409	7136	3936	11900	12615	4256
LGV	Business	2019	1	4	9	7	5	13	14	9
LGV	Business	2034	1	14	17	10	6	18	20	12
LGV	Business	Total	54	787	958	583	354	1079	1170	680
LGV	Commuting	2019	1	5	11	8	5	15	16	10
LGV	Commuting	2034	1	16	19	11	7	21	23	13
LGV	Commuting	Total	61	895	1091	663	403	1228	1332	774
LGV	Other	2019	0	2	4	3	2	5	6	3
LGV	Other	2034	0	6	7	4	2	7	8	5
LGV	Other	Total	21	309	376	229	139	423	459	267
OGV1	Business	2019	-0	1	2	1	1	3	2	8
OGV1	Business	2034	0	2	4	2	1	4	3	12
OGV1	Business	Total	1	133	248	125	58	237	177	688
OGV1	Commuting	2019	-0	0	1	0	0	1	1	2
OGV1	Commuting	2034	0	1	1	1	0	1	1	3
OGV1	Commuting	Total	0	34	63	32	15	61	45	176
OGV1	Other	2019	-0	0	0	0	0	0	0	1
OGV1	Other	2034	0	0	0	0	0	0	0	1
OGV1	Other	Total	0	15	28	14	7	27	20	78
OGV2	Business	2019	-0	1	2	1	1	3	2	8
OGV2	Business	2034	0	2	4	2	1	4	3	11
OGV2	Business	Total	1	139	240	114	56	234	174	661
OGV2	Commuting	2019	-0	0	0	0	0	1	0	1
OGV2	Commuting	2034	0	0	1	0	0	1	1	2
OGV2	Commuting	Total	0	24	42	20	10	41	30	115
OGV2	Other	2019	-0	0	0	0	0	0	0	1
OGV2	Other	2034	0	0	0	0	0	0	0	1
OGV2	Other	Total	0	14	24	11	6	24	17	66

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	115	667	670	407	1323	1107	831
Car	Business	2034	12	302	748	667	400	1360	1164	793
Car	Business	Total	574	12480	33727	30616	18415	62106	52976	36656
Car	Commuting	2019	41	3006	4409	2531	1217	4140	1802	1546
Car	Commuting	2034	21	2622	3908	2303	1054	3952	1824	1457
Car	Commuting	Total	1078	117415	174490	102346	47262	174146	79577	64340
Car	Other	2019	47	335	953	815	434	1259	1407	558
Car	Other	2034	62	1006	1087	814	451	1369	1444	478
Car	Other	Total	2584	39138	46552	35615	19593	59057	62846	21480
LGV	Business	2019	18	121	258	202	124	360	391	234
LGV	Business	2034	19	290	341	202	123	376	408	236
LGV	Business	Total	853	12066	15029	9274	5642	17121	18582	10819
LGV	Commuting	2019	8	52	112	88	54	156	170	102
LGV	Commuting	2034	8	119	140	83	50	154	167	97

Yellow Route Option - 60 year

LGV	Commuting	Total	336	4716	5905	3656	2225	6746	7322	4265
LGV	Other	2019	2	16	35	27	17	49	53	32
LGV	Other	2034	2	37	44	26	16	48	52	30
LGV	Other	Total	105	1477	1850	1145	697	2113	2294	1336
OGV1	Business	2019	-0	21	61	40	20	83	56	228
OGV1	Business	2034	0	49	89	44	20	82	62	240
OGV1	Business	Total	13	2035	3868	1980	922	3770	2803	10910
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	25	50	36	18	80	58	223
OGV2	Business	2034	0	51	87	40	20	81	61	230
OGV2	Business	Total	13	2139	3717	1810	884	3726	2760	10507
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	115	654	657	403	1275	1010	788
Car	Business	2034	13	304	740	658	398	1328	1095	763
Car	Business	Total	579	12530	33376	30258	18301	60808	50217	35444
Car	Commuting	2019	44	3277	4609	2387	1271	3640	1121	1546
Car	Commuting	2034	24	2830	4025	2177	1094	3629	1276	1416
Car	Commuting	Total	1175	125582	179415	97548	48837	160966	58316	63096
Car	Other	2019	50	421	880	678	363	714	989	519
Car	Other	2034	65	1069	1026	701	401	855	1134	450
Car	Other	Total	2710	41641	44215	31234	17591	39746	50612	20350
LGV	Business	2019	18	118	254	194	121	358	392	236
LGV	Business	2034	19	291	338	196	120	366	392	228
LGV	Business	Total	861	12071	14899	9036	5549	16815	18096	10581
LGV	Commuting	2019	8	53	113	89	55	158	171	102
LGV	Commuting	2034	8	120	141	84	51	155	168	97
LGV	Commuting	Total	339	4758	5956	3688	2242	6787	7349	4276
LGV	Other	2019	2	17	36	28	17	49	54	32
LGV	Other	2034	2	38	44	26	16	49	53	30
LGV	Other	Total	106	1491	1866	1156	703	2126	2302	1340
OGV1	Business	2019	-0	24	66	42	20	90	61	254
OGV1	Business	2034	0	54	94	46	21	87	65	258
OGV1	Business	Total	12	2211	4071	2057	950	3968	2929	11624
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	3	7	4	2	5	3	7
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	1	3	2	1	2	1	3
OGV2	Business	2019	-0	33	62	40	19	93	67	275
OGV2	Business	2034	0	61	100	43	21	91	68	268
OGV2	Business	Total	12	2506	4185	1939	933	4096	3042	12012
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	2.57%	3.34%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	795827	795827	0
Vehicle operating costs	-25465	-25465	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Yellow Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	770362	770362	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	297882	297882	0
Vehicle operating costs	-38679	-38679	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	259203	259203	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	388791	336934	51857	0	0
Vehicle operating costs	-2822	-7513	4691	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	385968	329421	56547	0	0

Private Sector Provider Impacts					
Revenue	0	0	0	0	0
Operating costs	0	0	0	0	0
Investment costs	0	0	0	0	0
Grant/subsidy	0	0	0	0	0
Subtotal	0	0	0	0	0

Other business Impacts					
Developer contributions	0	0	0	0	0
NET BUSINESS IMPACT	385968				

TOTAL
 Present Value of Transport Economic
 Efficiency Benefits (TEE) 1415533

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	16904	16904	0
Investment costs	363749	363749	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	380653	380653	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	1922	1922	0

TOTALS			
Broad Transport Budget	380653	380653	0
Wider Public Finances	1922	1922	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	46
Economic Efficiency: Consumer Users (Commuting)	770362
Economic Efficiency: Consumer Users (Other)	259203
Economic Efficiency: Business Users and Providers	385968
Wider Public Finances (Indirect Taxation Revenues)	-1922
Present Value of Benefits (PVB)	1413657
Broad Transport Budget	380653
Present Value of Costs (PVC)	380653

OVERALL IMPACTS

Yellow Route Option - 60 year

Net Present Value (NPV)	1033004
Benefit to Cost Ratio (BCR)	3.714

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Yellow_V2_60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\YELLOW_60.OUT

Elapsed time :

Blue Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Thu Aug 27, 2015 at 18:55:15

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 118679 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
8	79	1	OGV2	Other	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV2	Business	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV2	Commuting	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV1	Other	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV1	Commuting	All	2019	0.053	0.096	0.548	0.158	0.158

Displayed 5 warnings of a total of 130 of this type.

Warning (137 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
105	9	1	OGV2	Other	All	2034	0.627	0.182	3.437	0.001	0.001
105	9	1	OGV2	Business	All	2034	0.627	0.182	3.437	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.182	3.437	0.001	0.001

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105	9	1	OGV1	Commuting	All	2034	0.621	0.182	3.406	0.001	0.001
105	9	1	OGV1	Other	All	2034	0.621	0.182	3.406	0.001	0.001

Displayed 5 warnings of a total of 96722 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
56	151	1	LGV	Commuting	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	LGV	Other	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	LGV	Business	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	Car	Business	All	2034	3.480	9.179	0.379	0.001	0.001
56	151	1	Car	Other	All	2034	3.484	9.163	0.380	0.157	0.195

Displayed 5 warnings of a total of 18057 of this type.

Warning (3238 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.609	3.410	0.025	0.023
73	8	1	Car	Other	All	2034	5.299	1.613	3.285	0.048	0.048
73	8	1	LGV	Commuting	All	2034	5.124	1.585	3.233	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.585	3.233	0.021	0.021
73	8	1	LGV	Other	All	2034	5.124	1.585	3.233	0.021	0.021

Displayed 5 warnings of a total of 3238 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.057	4.682	0.091
10	6	2	Car	Business	All	2034	0.265	0.057	4.682	0.891
10	6	2	Car	Other	All	2034	0.265	0.057	4.682	1.331
10	6	2	LGV	Business	All	2034	0.265	0.057	4.682	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.057	4.682	0.399

Displayed 5 warnings of a total of 79 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.026

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base    120.60 0.00 0.00
av_ind_tax  19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base    100.00 0.00 0.00
av_ind_tax  19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

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VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

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VALUE_OF_TIME - (std)

*pence per hour

*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2274.0	681.0	604.0	
1	2	1725.0	681.0	604.0	
2	1	1024.0	681.0	604.0	
2	2	1024.0	681.0	604.0	
3	1	1024.0	0.0	0.0	
3	2	1024.0	0.0	0.0	
4	1	1206.0	0.0	0.0	
4	2	1206.0	0.0	0.0	
5	1	1206.0	0.0	0.0	
5	2	1206.0	0.0	0.0	
6	1	1232.0	0.0	0.0	
6	2	1397.0	681.0	604.0	
7	1	0.0	0.0	0.0	
7	2	2208.0	681.0	604.0	
8	1	0.0	0.0	0.0	
8	2	2686.0	681.0	604.0	

VALUE_OF_TIME_GROWTH - (used)

*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3	..
2010	2010	0.00	-1.00	-1.00	
2011	2011	0.00	1.60	1.60	
2012	2020	2.50	2.00	2.00	
2021	2095	2.00	1.60	1.60	

VALUE_OF_TIME_GROWTH - (std)

*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3	..
2011	2011	0.28	0.28	0.28	
2012	2012	-0.38	-0.38	-0.38	
2013	2013	1.07	1.07	1.07	
2014	2014	2.05	2.05	2.05	
2015	2015	1.67	1.67	1.67	
2016	2016	1.95	1.95	1.95	
2017	2017	1.99	1.99	1.99	
2018	2018	1.90	1.90	1.90	
2019	2019	2.23	2.23	2.23	
2020	2020	2.24	2.24	2.24	
2021	2021	1.86	1.86	1.86	
2022	2022	1.87	1.87	1.87	
2023	2023	1.89	1.89	1.89	
2024	2024	1.90	1.90	1.90	
2025	2025	2.02	2.02	2.02	
2026	2026	2.04	2.04	2.04	
2027	2027	2.05	2.05	2.05	
2028	2028	2.07	2.07	2.07	
2029	2029	2.09	2.09	2.09	
2030	2030	2.11	2.11	2.11	
2031	2031	2.02	2.02	2.02	
2032	2032	2.04	2.04	2.04	
2033	2033	2.05	2.05	2.05	
2034	2034	1.96	1.96	1.96	
2035	2035	2.07	2.07	2.07	
2036	2036	2.08	2.08	2.08	
2037	2037	2.09	2.09	2.09	
2038	2038	2.10	2.10	2.10	
2039	2039	2.10	2.10	2.10	
2040	2040	2.20	2.20	2.20	
2041	2041	2.20	2.20	2.20	
2042	2042	2.22	2.22	2.22	
2043	2043	2.22	2.22	2.22	
2044	2044	2.22	2.22	2.22	
2045	2045	2.22	2.22	2.22	
2046	2046	2.22	2.22	2.22	
2047	2047	2.15	2.15	2.15	
2048	2048	2.15	2.15	2.15	
2049	2049	2.15	2.15	2.15	
2050	2050	2.15	2.15	2.15	
2051	2051	2.15	2.15	2.15	
2052	2052	2.09	2.09	2.09	
2053	2053	2.09	2.09	2.09	
2054	2054	2.09	2.09	2.09	

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2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Blue Route Option - 30 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Blue Route Option - 30 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Blue Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Blue Route Option - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Blue Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Blue Route Option - 30 year

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*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

Blue Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Blue Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	428513	428513
Road	2020	0	1469	1469
Road	2021	0	1412	1412
Road	2022	0	1405	1405
Road	2023	0	1351	1351
Road	2024	0	1299	1299
Road	2025	0	1290	1290
Road	2026	0	1241	1241
Road	2027	0	1193	1193
Road	2028	0	1147	1147
Road	2029	0	1139	1139
Road	2030	0	1095	1095
Road	2031	0	1053	1053
Road	2032	0	1044	1044
Road	2033	0	1004	1004
Road	2034	0	965	965
Road	2035	0	956	956
Road	2036	0	919	919
Road	2037	0	884	884
Road	2038	0	875	875
Road	2039	0	841	841
Road	2040	0	809	809
Road	2041	0	800	800
Road	2042	0	769	769
Road	2043	0	760	760
Road	2044	0	731	731
Road	2045	0	703	703
Road	2046	0	694	694
Road	2047	0	667	667
Road	2048	0	642	642
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Blue Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	457671	457671
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112021
Car	2019	All	113832	112021
Car	2034	AM Hour 8-9	127298	125316
Car	2034	All	127298	125316
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127348
All	2019	All	129159	127348
All	2034	AM Hour 8-9	144161	142178
All	2034	All	144161	142178

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	Dmtot_time	Dmtot_charge	Dmtot_fuel	Dmtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	978325	0	4554	210234
Road	2034	820412	0	3541	128265	795758	0	3316	130014

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3485	1156
Car	2034	4630	1659	4326	1550
LGV	2019	85	480	81	460
LGV	2034	97	549	91	517
OGV1	2019	53	302	52	294
OGV1	2034	59	332	56	320
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3618	1910
All	2034	4785	2539	4474	2387
Car	Total	137617	48941	128839	45817
LGV	Total	2904	16455	2748	15574
OGV1	Total	1773	10047	1713	9704
OGV2	Total	0	0	0	0
All	Total	142294	75442	133300	71095

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3017	-185	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3826	-268	127	119	-8	17	16	-1	17	16	-1
LGV	2019	397	381	-17	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	428	-26	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	243	-7	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	265	-10	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3641	-208	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3737	-217	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3835	-226	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3936	-235	116	109	-7	28	26	-2	28	26	-2

Blue Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3641	-208	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4519	-304	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	134641	-8761	4499	4224	-276	622	585	-37	622	585	-37

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	35993	0	309	-1804	0	-82
Road	2020	36366	0	312	-1810	0	-82
Road	2021	36561	0	315	-1813	0	-82
Road	2022	36730	0	319	-1814	0	-82
Road	2023	36875	0	322	-1811	0	-82
Road	2024	36995	0	325	-1806	0	-82
Road	2025	37092	0	321	-1799	0	-80
Road	2026	37167	0	318	-1790	0	-78
Road	2027	37221	0	315	-1779	0	-76
Road	2028	37254	0	311	-1766	0	-73
Road	2029	37269	0	307	-1751	0	-71
Road	2030	37264	0	304	-1735	0	-69
Road	2031	37242	0	298	-1717	0	-67
Road	2032	37204	0	293	-1698	0	-65
Road	2033	37149	0	287	-1679	0	-63
Road	2034	37078	0	282	-1658	0	-61
Road	2035	36261	0	271	-1594	0	-59
Road	2036	35462	0	261	-1533	0	-57
Road	2037	34681	0	251	-1474	0	-55
Road	2038	33917	0	241	-1417	0	-53
Road	2039	33170	0	232	-1363	0	-51
Road	2040	32440	0	223	-1310	0	-49
Road	2041	31726	0	214	-1260	0	-47
Road	2042	31027	0	206	-1211	0	-45
Road	2043	30344	0	198	-1165	0	-43
Road	2044	29676	0	191	-1120	0	-42
Road	2045	29023	0	183	-1077	0	-40
Road	2046	28385	0	176	-1035	0	-38
Road	2047	27760	0	169	-996	0	-37
Road	2048	27150	0	163	-957	0	-35
Road	2049	26553	0	157	-921	0	-34
Road	Total	1059035	0	8074	-46661	0	-1883

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	31229	0	283	-2007	0	-70
Car	2034	31791	0	259	-1806	0	-51
LGV	2019	3360	0	19	-20	0	-9
LGV	2034	3745	0	17	-25	0	-8
OGV1	2019	709	0	7	71	0	-4
OGV1	2034	782	0	6	54	0	-3
OGV2	2019	695	0	0	152	0	0
OGV2	2034	761	0	0	120	0	0
All	2019	35993	0	309	-1804	0	-82

Blue Route Option - 30 year

All	2034	37078	0	282	-1658	0	-61
Car	Total	909855	0	7412	-51116	0	-1571
LGV	Total	105434	0	478	-661	0	-225
OGV1	Total	22154	0	184	-1599	0	-86
OGV2	Total	21591	0	0	3517	0	0
All	Total	1059034	0	8074	-46661	0	-1883

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	35993	0	309	-1804	-82
All	2034	37078	0	282	-1658	-61
All	Total	1059034	0	8074	-46661	-1883

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	9052	0	33	104	-16
Business	2034	10042	0	31	68	-13
Commuting	2019	20437	0	216	-887	-78
Commuting	2034	19520	0	189	-718	-63
Other	2019	6504	0	59	-1020	11
Other	2034	7516	0	62	-1008	15
Business	Total	284177	0	879	2115	-382
Commuting	Total	566559	0	5472	-20926	-1872
Other	Total	208299	0	1723	-27850	371

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	35993	0	309	-1804	-82
AM Hour 8-9	2034	37078	0	282	-1658	-61
AM Hour 8-9	Total	1059034	0	8074	-46661	-1883

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-1	-20	37	54	132
Car	Business	2034	0	-2	-14	52	72	188
Car	Business	Total	0	-52	-475	1493	2080	5383
Car	Commuting	2019	-0	-3	-65	230	597	1115
Car	Commuting	2034	-0	-3	-49	261	694	1612
Car	Commuting	Total	-9	-91	-1659	7851	20739	45992
Car	Other	2019	0	-3	-155	252	207	355
Car	Other	2034	0	-16	-97	422	281	487
Car	Other	Total	0	-396	-3478	11720	8117	14034
LGV	Business	2019	0	-2	-9	25	27	37
LGV	Business	2034	0	-2	-7	37	35	56
LGV	Business	Total	0	-55	-223	1051	1009	1582
LGV	Commuting	2019	0	-2	-10	29	30	42
LGV	Commuting	2034	0	-2	-7	42	39	64
LGV	Commuting	Total	0	-63	-254	1197	1148	1800
LGV	Other	2019	0	-1	-4	10	10	15
LGV	Other	2034	0	-1	-3	14	14	22
LGV	Other	Total	0	-22	-88	412	396	620
OGV1	Business	2019	-0	-0	-3	5	8	16
OGV1	Business	2034	-0	-0	-2	7	11	23
OGV1	Business	Total	-2	-14	-74	213	309	655
OGV1	Commuting	2019	-0	-0	-1	1	2	4
OGV1	Commuting	2034	-0	-0	-1	2	3	6
OGV1	Commuting	Total	-1	-4	-19	55	79	168
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-0	-2	-8	24	35	75
OGV2	Business	2019	-0	-0	-3	5	7	16
OGV2	Business	2034	-0	-0	-2	7	10	23
OGV2	Business	Total	-3	-13	-78	212	290	650
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-0	-2	-14	37	50	113
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-1	-8	21	29	65

Blue Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-14	-554	1021	1460	3596
Car	Business	2034	0	-43	-278	1063	1470	3853
Car	Business	Total	0	-1025	-10102	30531	42586	109935
Car	Commuting	2019	-2	-32	-679	2393	6217	11611
Car	Commuting	2034	-2	-21	-364	1926	5112	11872
Car	Commuting	Total	-66	-688	-12725	58614	154626	338676
Car	Other	2019	0	-28	-1468	2388	1961	3360
Car	Other	2034	0	-108	-651	2825	1880	3259
Car	Other	Total	0	-2530	-24583	77866	54526	94212
LGV	Business	2019	0	-47	-249	691	729	1015
LGV	Business	2034	0	-37	-134	755	707	1143
LGV	Business	Total	0	-1141	-4728	21450	20692	32233
LGV	Commuting	2019	0	-20	-108	301	317	441
LGV	Commuting	2034	0	-15	-55	309	290	468
LGV	Commuting	Total	0	-470	-1957	8808	8507	13232
LGV	Other	2019	0	-6	-34	94	99	138
LGV	Other	2034	0	-5	-17	97	91	147
LGV	Other	Total	0	-147	-613	2759	2664	4145
OGV1	Business	2019	-2	-13	-72	146	211	439
OGV1	Business	2034	-2	-9	-47	152	220	468
OGV1	Business	Total	-52	-295	-1543	4358	6309	13377
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-3	-10	-78	144	204	437
OGV2	Business	2034	-1	-9	-49	151	205	464
OGV2	Business	Total	-53	-265	-1642	4332	5944	13275
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-10	-569	1007	1432	3569
Car	Business	2034	0	-38	-273	1057	1432	3826
Car	Business	Total	0	-903	-10088	30323	41606	109198
Car	Commuting	2019	-1	-17	-100	3611	6262	9072
Car	Commuting	2034	-1	-10	119	2789	5256	9831
Car	Commuting	Total	-33	-353	1229	84809	157946	279138
Car	Other	2019	0	-11	-1054	2580	1418	2315
Car	Other	2034	0	-101	-400	2803	1495	2459
Car	Other	Total	0	-2251	-16567	78718	42846	70532
LGV	Business	2019	0	-45	-257	698	725	1006
LGV	Business	2034	0	-36	-136	759	703	1127
LGV	Business	Total	0	-1121	-4834	21576	20567	31846
LGV	Commuting	2019	0	-21	-109	304	320	445
LGV	Commuting	2034	0	-15	-55	312	292	471
LGV	Commuting	Total	0	-474	-1971	8884	8574	13323
LGV	Other	2019	0	-6	-34	95	100	139
LGV	Other	2034	0	-5	-17	98	91	148
LGV	Other	Total	0	-148	-617	2784	2687	4174
OGV1	Business	2019	-2	-13	-80	163	232	486
OGV1	Business	2034	-1	-9	-51	165	233	504
OGV1	Business	Total	-44	-300	-1682	4748	6737	14432
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-2	7	9	19
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	3	4	8
OGV2	Business	2019	-3	-11	-93	179	248	527
OGV2	Business	2034	-1	-10	-57	179	237	533
OGV2	Business	Total	-46	-289	-1909	5139	6907	15305
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Blue Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	15	37	26	15	48	33	28
Car	Business	2034	1	25	54	36	20	69	53	38
Car	Business	Total	17	689	1528	1036	587	1975	1493	1105
Car	Commuting	2019	4	289	447	245	123	429	176	160
Car	Commuting	2034	3	363	581	336	157	597	258	221
Car	Commuting	Total	110	10657	16927	9684	4599	17158	7331	6358
Car	Other	2019	4	103	143	78	44	113	115	56
Car	Other	2034	7	198	222	123	70	199	187	69
Car	Other	Total	205	5384	6254	3454	1967	5482	5208	2043
LGV	Business	2019	1	16	17	7	4	12	13	9
LGV	Business	2034	1	26	27	10	6	18	20	11
LGV	Business	Total	26	722	758	295	164	513	554	331
LGV	Commuting	2019	1	18	19	8	4	14	15	10
LGV	Commuting	2034	1	29	31	12	7	21	22	13
LGV	Commuting	Total	29	821	863	336	187	584	631	377
LGV	Other	2019	0	6	7	3	2	5	5	3
LGV	Other	2034	0	10	11	4	2	7	8	4
LGV	Other	Total	10	283	297	116	64	201	217	130
OGV1	Business	2019	-0	4	5	2	1	3	2	10
OGV1	Business	2034	0	6	8	2	1	4	3	13
OGV1	Business	Total	0	163	234	70	30	119	87	384
OGV1	Commuting	2019	-0	1	1	0	0	1	1	2
OGV1	Commuting	2034	0	1	2	1	0	1	1	3
OGV1	Commuting	Total	0	42	60	18	8	30	22	98
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	0	0	2
OGV1	Other	Total	0	19	27	8	3	14	10	44
OGV2	Business	2019	-0	4	5	1	1	3	2	9
OGV2	Business	2034	0	6	8	2	1	4	3	13
OGV2	Business	Total	0	165	230	63	26	116	84	373
OGV2	Commuting	2019	-0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	1	0	0	1	1	2
OGV2	Commuting	Total	0	29	40	11	5	20	15	65
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	0	0	1
OGV2	Other	Total	0	17	23	6	3	12	8	37

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	400	1000	715	411	1306	899	765
Car	Business	2034	12	509	1099	736	415	1417	1094	783
Car	Business	Total	350	13963	31169	21194	12015	40311	30317	22607
Car	Commuting	2019	40	3014	4653	2555	1285	4471	1828	1662
Car	Commuting	2034	25	2672	4276	2473	1157	4395	1898	1627
Car	Commuting	Total	831	79108	125384	71527	34107	126617	53938	46926
Car	Other	2019	41	972	1357	743	413	1069	1087	531
Car	Other	2034	50	1328	1487	823	471	1333	1249	464
Car	Other	Total	1361	35526	41712	23022	13094	36326	34653	13797
LGV	Business	2019	18	434	462	190	108	332	360	235
LGV	Business	2034	18	529	554	213	118	370	399	233
LGV	Business	Total	529	14656	15409	6016	3345	10467	11302	6783
LGV	Commuting	2019	8	189	201	83	47	144	157	102
LGV	Commuting	2034	8	217	227	87	48	152	163	96
LGV	Commuting	Total	217	6012	6322	2470	1374	4297	4640	2788
LGV	Other	2019	2	59	63	26	15	45	49	32
LGV	Other	2034	2	68	71	27	15	48	51	30
LGV	Other	Total	68	1883	1980	774	430	1346	1453	873
OGV1	Business	2019	-0	106	144	44	18	82	54	261
OGV1	Business	2034	0	117	170	51	22	84	63	274
OGV1	Business	Total	0	3322	4751	1420	606	2437	1769	7849
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	110	136	41	16	80	54	259

Blue Route Option - 30 year

OGV2	Business	2034	0	119	170	45	19	82	61	264
OGV2	Business	Total	0	3378	4677	1283	535	2373	1718	7628
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	402	992	703	405	1284	878	753
Car	Business	2034	12	512	1096	728	412	1401	1073	771
Car	Business	Total	353	14047	31043	20947	11920	39827	29743	22255
Car	Commuting	2019	44	3357	4933	2427	1353	3882	1193	1637
Car	Commuting	2034	28	2925	4440	2350	1202	4069	1404	1566
Car	Commuting	Total	927	86716	130706	68119	35510	115886	39382	45490
Car	Other	2019	45	1056	1243	629	380	516	858	521
Car	Other	2034	54	1395	1383	715	434	726	1094	455
Car	Other	Total	1491	37478	38784	20026	12111	19966	29887	13535
LGV	Business	2019	18	439	463	184	105	327	357	233
LGV	Business	2034	19	535	555	208	115	363	392	230
LGV	Business	Total	535	14814	15430	5874	3271	10277	11122	6711
LGV	Commuting	2019	8	191	203	84	47	145	158	103
LGV	Commuting	2034	8	219	229	88	49	153	164	96
LGV	Commuting	Total	219	6070	6382	2493	1386	4328	4662	2797
LGV	Other	2019	2	60	64	26	15	46	49	32
LGV	Other	2034	2	69	72	28	15	48	51	30
LGV	Other	Total	69	1902	2000	781	434	1356	1460	876
OGV1	Business	2019	-0	123	160	47	20	90	60	285
OGV1	Business	2034	0	131	184	54	23	90	66	292
OGV1	Business	Total	-0	3712	5155	1514	641	2612	1864	8395
OGV1	Commuting	2019	-0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	6	10	3	1	4	2	6
OGV1	Other	2019	-0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	3	4	1	1	2	1	3
OGV2	Business	2019	-0	144	169	48	19	95	64	308
OGV2	Business	2034	0	144	198	52	22	94	68	303
OGV2	Business	Total	-0	4139	5483	1462	612	2713	1941	8757
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	2019	2034
Road	2.83%	3.75%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus		
Travel Time	566559	566559	0		
Vehicle operating costs	-15454	-15454	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - COMMUTING BENEFITS	551105	551105	0		
Consumer - Other user benefits	All Modes	Road	Bus		
Travel Time	208299	208299	0		
Vehicle operating costs	-26128	-26128	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - OTHER BENEFITS	182171	182171	0		
Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	284177	240432	43745	0	0
Vehicle operating costs	2994	-2261	5254	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0

Blue Route Option - 30 year

Subtotal	287170	238171	48999	0	0
Private Sector Provider Impacts					
Revenue	0		0		0
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	0		0		0
Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	287170				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1020446				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	30685	30685	0
Investment costs	426986	426986	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	457671	457671	0
Central Government Funding: Non-Transport			
Indirect Tax Revenues	1883	1883	0
TOTALS			
Broad Transport Budget	457671	457671	0
Wider Public Finances	1883	1883	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	37
Economic Efficiency: Consumer Users (Commuting)	551105
Economic Efficiency: Consumer Users (Other)	182171
Economic Efficiency: Business Users and Providers	287170
Wider Public Finances (Indirect Taxation Revenues)	-1883
Present Value of Benefits (PVB)	1018600
Broad Transport Budget	457671
Present Value of Costs (PVC)	457671
OVERALL IMPACTS	
Net Present Value (NPV)	560929
Benefit to Cost Ratio (BCR)	2.226

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Blue_V2 30.txt

Blue Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\BLUE_30.OUT

Elapsed time :

Blue Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 09:56:05

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
118679 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
8	79	1	OGV2	Other	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV2	Business	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV2	Commuting	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV1	Other	All	2019	0.053	0.096	0.548	0.158	0.158
8	79	1	OGV1	Commuting	All	2019	0.053	0.096	0.548	0.158	0.158

Displayed 5 warnings of a total of 130 of this type.

Warning (137 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
105	9	1	OGV2	Other	All	2034	0.627	0.182	3.437	0.001	0.001
105	9	1	OGV2	Business	All	2034	0.627	0.182	3.437	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.182	3.437	0.001	0.001

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105	9	1	OGV1	Commuting	All	2034	0.621	0.182	3.406	0.001	0.001
105	9	1	OGV1	Other	All	2034	0.621	0.182	3.406	0.001	0.001

Displayed 5 warnings of a total of 96722 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
56	151	1	LGV	Commuting	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	LGV	Other	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	LGV	Business	All	2034	3.479	9.179	0.379	0.026	0.026
56	151	1	Car	Business	All	2034	3.480	9.179	0.379	0.001	0.001
56	151	1	Car	Other	All	2034	3.484	9.163	0.380	0.157	0.195

Displayed 5 warnings of a total of 18057 of this type.

Warning (3238 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.609	3.410	0.025	0.023
73	8	1	Car	Other	All	2034	5.299	1.613	3.285	0.048	0.048
73	8	1	LGV	Commuting	All	2034	5.124	1.585	3.233	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.585	3.233	0.021	0.021
73	8	1	LGV	Other	All	2034	5.124	1.585	3.233	0.021	0.021

Displayed 5 warnings of a total of 3238 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.057	4.682	0.091
10	6	2	Car	Business	All	2034	0.265	0.057	4.682	0.891
10	6	2	Car	Other	All	2034	0.265	0.057	4.682	1.331
10	6	2	LGV	Business	All	2034	0.265	0.057	4.682	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.057	4.682	0.399

Displayed 5 warnings of a total of 79 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.026

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

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VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

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```

VALUE_OF_TIME - (std)
*perce per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

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2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Blue Route Option - 60 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Blue Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Blue Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Blue Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Blue Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Blue Route Option - 60 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

Blue Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Blue Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	428513	428513
Road	2020	0	1469	1469
Road	2021	0	1412	1412
Road	2022	0	1405	1405
Road	2023	0	1351	1351
Road	2024	0	1299	1299
Road	2025	0	1290	1290
Road	2026	0	1241	1241
Road	2027	0	1193	1193
Road	2028	0	1147	1147
Road	2029	0	1139	1139
Road	2030	0	1095	1095
Road	2031	0	1053	1053
Road	2032	0	1044	1044
Road	2033	0	1004	1004
Road	2034	0	965	965
Road	2035	0	956	956
Road	2036	0	919	919
Road	2037	0	884	884
Road	2038	0	875	875
Road	2039	0	841	841
Road	2040	0	809	809
Road	2041	0	800	800
Road	2042	0	769	769
Road	2043	0	760	760
Road	2044	0	731	731
Road	2045	0	703	703
Road	2046	0	694	694
Road	2047	0	667	667
Road	2048	0	642	642
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Blue Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	457671	457671
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112021
Car	2019	All	113832	112021
Car	2034	AM Hour 8-9	127298	125316
Car	2034	All	127298	125316
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127348
All	2019	All	129159	127348
All	2034	AM Hour 8-9	144161	142178
All	2034	All	144161	142178

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	978325	0	4554	210234
Road	2034	820412	0	3541	128265	795758	0	3316	130014

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3485	1156
Car	2034	4630	1659	4326	1550
LGV	2019	85	480	81	460
LGV	2034	97	549	91	517
OGV1	2019	53	302	52	294
OGV1	2034	59	332	56	320
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3618	1910
All	2034	4785	2539	4474	2387
Car	Total	276503	98698	258621	92313
LGV	Total	5808	32910	5487	31091
OGV1	Total	3529	20000	3405	19295
OGV2	Total	0	0	0	0
All	Total	285839	151607	267512	142698

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3017	-185	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3826	-268	127	119	-8	17	16	-1	17	16	-1
LGV	2019	397	381	-17	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	428	-26	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	243	-7	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	265	-10	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3641	-208	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3737	-217	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3835	-226	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3936	-235	116	109	-7	28	26	-2	28	26	-2

Blue Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3641	-208	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4519	-304	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	270219	-17891	10560	9902	-658	815	765	-50	815	765	-50

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Blue Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_pri	Fuel	Non_fuel	PT_fares_pri
						Taxes
Road	2019	35993	0	309	-1804	0
Road	2020	36366	0	312	-1810	0
Road	2021	36561	0	315	-1813	0
Road	2022	36730	0	319	-1814	0
Road	2023	36875	0	322	-1811	0
Road	2024	36995	0	325	-1806	0
Road	2025	37092	0	321	-1799	0
Road	2026	37167	0	318	-1790	0
Road	2027	37221	0	315	-1779	0
Road	2028	37254	0	311	-1766	0
Road	2029	37269	0	307	-1751	0
Road	2030	37264	0	304	-1735	0
Road	2031	37242	0	298	-1717	0
Road	2032	37204	0	293	-1698	0
Road	2033	37149	0	287	-1679	0
Road	2034	37078	0	282	-1658	0
Road	2035	36261	0	271	-1594	0
Road	2036	35462	0	261	-1533	0
Road	2037	34681	0	251	-1474	0
Road	2038	33917	0	241	-1417	0
Road	2039	33170	0	232	-1363	0
Road	2040	32440	0	223	-1310	0
Road	2041	31726	0	214	-1260	0
Road	2042	31027	0	206	-1211	0
Road	2043	30344	0	198	-1165	0
Road	2044	29676	0	191	-1120	0
Road	2045	29023	0	183	-1077	0
Road	2046	28385	0	176	-1035	0
Road	2047	27760	0	169	-996	0
Road	2048	27150	0	163	-957	0
Road	2049	26553	0	157	-921	0
Road	2050	25969	0	151	-885	0
Road	2051	25398	0	145	-851	0
Road	2052	24839	0	139	-818	0
Road	2053	24293	0	134	-787	0
Road	2054	23760	0	129	-757	0
Road	2055	23237	0	124	-728	0
Road	2056	22727	0	119	-700	0
Road	2057	22228	0	114	-673	0
Road	2058	21739	0	110	-647	0
Road	2059	21262	0	106	-622	0
Road	2060	20795	0	102	-598	0
Road	2061	20338	0	98	-575	0
Road	2062	19892	0	94	-553	0
Road	2063	19455	0	90	-532	0
Road	2064	19028	0	87	-511	0
Road	2065	18611	0	84	-491	0
Road	2066	18202	0	80	-473	0
Road	2067	17803	0	77	-454	0
Road	2068	17413	0	74	-437	0
Road	2069	17031	0	71	-420	0
Road	2070	16657	0	69	-404	0
Road	2071	16292	0	66	-388	0
Road	2072	15935	0	64	-373	0
Road	2073	15586	0	61	-359	0
Road	2074	15244	0	59	-345	0
Road	2075	14910	0	56	-332	0
Road	2076	14584	0	54	-319	0
Road	2077	14264	0	52	-307	0
Road	2078	13952	0	50	-295	0
Road	2079	14192	0	50	-295	0
Road	Total	1634672	0	10783	-62591	0

Blue Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. f000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Car	2019	31229	0	283	-2007	0
Car	2034	31791	0	259	-1806	0
LGV	2019	3360	0	19	-20	0
LGV	2034	3745	0	17	-25	0
OGV1	2019	709	0	7	71	0
OGV1	2034	782	0	6	54	0
OGV2	2019	695	0	0	152	0
OGV2	2034	761	0	0	120	0
All	2019	35993	0	309	-1804	0
All	2034	37078	0	282	-1658	0
Car	Total	1398800	0	9897	-68469	0
LGV	Total	166149	0	640	-905	0
OGV1	Total	35321	0	247	2115	0
OGV2	Total	34402	0	0	4668	0
All	Total	1634672	0	10783	-62591	0

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. f000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	35993	0	309	-1804	0
All	2034	37078	0	282	-1658	0
All	Total	1634672	0	10783	-62591	0

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. f000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	9052	0	33	104	0
Business	2034	10042	0	31	68	0
Commuting	2019	20437	0	216	-887	0
Commuting	2034	19520	0	189	-718	0
Other	2019	6504	0	59	-1020	0
Other	2034	7516	0	62	-1008	0
Business	Total	453331	0	1176	2769	0
Commuting	Total	860033	0	7284	-27827	0
Other	Total	321307	0	2323	-37533	0

PERIOD

User benefits and changes in revenues by time period, modelled years and total. f000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	35993	0	309	-1804	0
AM Hour 8-9	2034	37078	0	282	-1658	0
AM Hour 8-9	Total	1634672	0	10783	-62591	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-1	-20	37	54	132
Car	Business	2034	0	-2	-14	52	72	188
Car	Business	Total	0	-114	-882	3050	4233	11029
Car	Commuting	2019	-0	-3	-65	230	597	1115
Car	Commuting	2034	-0	-3	-49	261	694	1612
Car	Commuting	Total	-18	-177	-3143	15694	41560	94347
Car	Other	2019	0	-3	-155	252	207	355
Car	Other	2034	0	-16	-97	422	281	487
Car	Other	Total	0	-882	-6396	24376	16543	28635
LGV	Business	2019	0	-2	-9	25	27	37
LGV	Business	2034	0	-2	-7	37	35	56
LGV	Business	Total	0	-109	-419	2158	2045	3257
LGV	Commuting	2019	0	-2	-10	29	30	42
LGV	Commuting	2034	0	-2	-7	42	39	64
LGV	Commuting	Total	0	-124	-477	2456	2328	3707
LGV	Other	2019	0	-1	-4	10	10	15
LGV	Other	2034	0	-1	-3	14	14	22
LGV	Other	Total	0	-43	-164	846	802	1277
OGV1	Business	2019	-0	-0	-3	5	8	16
OGV1	Business	2034	-0	-0	-2	7	11	23
OGV1	Business	Total	-5	-28	-142	435	630	1341
OGV1	Commuting	2019	-0	-0	-1	1	2	4

Blue Route Option - 60 year

OGV1	Commuting	2034	-0	-0	-1	2	3	6
OGV1	Commuting	Total	-1	-7	-36	111	161	343
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-1	-3	-16	50	72	153
OGV2	Business	2019	-0	-0	-3	5	7	16
OGV2	Business	2034	-0	-0	-2	7	10	23
OGV2	Business	Total	-5	-26	-150	433	591	1330
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-1	-5	-26	75	103	231
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-3	-15	43	59	133

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-14	-554	1021	1460	3596
Car	Business	2034	0	-43	-278	1063	1470	3853
Car	Business	Total	0	-1742	-14785	48430	67342	174833
Car	Commuting	2019	-2	-32	-679	2393	6217	11611
Car	Commuting	2034	-2	-21	-364	1926	5112	11872
Car	Commuting	Total	-100	-1006	-18202	87567	231486	517175
Car	Other	2019	0	-28	-1468	2388	1961	3360
Car	Other	2034	0	-108	-651	2825	1880	3259
Car	Other	Total	0	-4160	-34374	120332	82799	143207
LGV	Business	2019	0	-47	-249	691	729	1015
LGV	Business	2034	0	-37	-134	755	707	1143
LGV	Business	Total	0	-1761	-6977	34173	32608	51487
LGV	Commuting	2019	0	-20	-108	301	317	441
LGV	Commuting	2034	0	-15	-55	309	290	468
LGV	Commuting	Total	0	-697	-2779	13458	12862	20269
LGV	Other	2019	0	-6	-34	94	99	138
LGV	Other	2034	0	-5	-17	97	91	147
LGV	Other	Total	0	-218	-870	4215	4029	6349
OGV1	Business	2019	-2	-13	-72	146	211	439
OGV1	Business	2034	-2	-9	-47	152	220	468
OGV1	Business	Total	-80	-450	-2331	6911	10008	21264
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-3	-10	-78	144	204	437
OGV2	Business	2034	-1	-9	-49	151	205	464
OGV2	Business	Total	-78	-416	-2470	6874	9399	21093
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-10	-569	1007	1432	3569
Car	Business	2034	0	-38	-273	1057	1432	3826
Car	Business	Total	0	-1576	-14720	48168	65997	173836
Car	Commuting	2019	-1	-17	-100	3611	6262	9072
Car	Commuting	2034	-1	-10	119	2789	5256	9831
Car	Commuting	Total	-58	-564	393	122061	236185	438026
Car	Other	2019	0	-11	-1054	2580	1418	2315
Car	Other	2034	0	-101	-400	2803	1495	2459
Car	Other	Total	0	-3807	-23944	120975	67414	111841
LGV	Business	2019	0	-45	-257	698	725	1006
LGV	Business	2034	0	-36	-136	759	703	1127
LGV	Business	Total	0	-1738	-7107	34335	32440	50949
LGV	Commuting	2019	0	-21	-109	304	320	445
LGV	Commuting	2034	0	-15	-55	312	292	471
LGV	Commuting	Total	0	-701	-2796	13559	12952	20391
LGV	Other	2019	0	-6	-34	95	100	139
LGV	Other	2034	0	-5	-17	98	91	148
LGV	Other	Total	0	-220	-876	4248	4058	6388

Blue Route Option - 60 year

OGV1	Business	2019	-2	-13	-80	163	232	486
OGV1	Business	2034	-1	-9	-51	165	233	504
OGV1	Business	Total	-69	-457	-2508	7429	10568	22659
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-1	-3	9	12	25
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	4	5	11
OGV2	Business	2019	-3	-11	-93	179	248	527
OGV2	Business	2034	-1	-10	-57	179	237	533
OGV2	Business	Total	-68	-447	-2813	7947	10669	23782
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	15	37	26	15	48	33	28
Car	Business	2034	1	25	54	36	20	69	53	38
Car	Business	Total	34	1434	3139	2114	1195	4051	3095	2253
Car	Commuting	2019	4	289	447	245	123	429	176	160
Car	Commuting	2034	3	363	581	336	157	597	258	221
Car	Commuting	Total	213	21538	34342	19756	9310	35057	15061	12985
Car	Other	2019	4	103	143	78	44	113	115	56
Car	Other	2034	7	198	222	123	70	199	187	69
Car	Other	Total	428	11334	12915	7139	4079	11453	10804	4122
LGV	Business	2019	1	16	17	7	4	12	13	9
LGV	Business	2034	1	26	27	10	6	18	20	11
LGV	Business	Total	53	1497	1570	607	337	1056	1139	673
LGV	Commuting	2019	1	18	19	8	4	14	15	10
LGV	Commuting	2034	1	29	31	12	7	21	22	13
LGV	Commuting	Total	60	1703	1787	691	383	1202	1297	766
LGV	Other	2019	0	6	7	3	2	5	5	3
LGV	Other	2034	0	10	11	4	2	7	8	4
LGV	Other	Total	21	587	616	238	132	414	447	264
OGV1	Business	2019	-0	4	5	2	1	3	2	10
OGV1	Business	2034	0	6	8	2	1	4	3	13
OGV1	Business	Total	0	335	483	144	62	243	180	785
OGV1	Commuting	2019	-0	1	1	0	0	1	1	2
OGV1	Commuting	2034	0	1	2	1	0	1	1	3
OGV1	Commuting	Total	0	86	124	37	16	62	46	201
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	0	0	2
OGV1	Other	Total	0	38	55	16	7	28	20	90
OGV2	Business	2019	-0	4	5	1	1	3	2	9
OGV2	Business	2034	0	6	8	2	1	4	3	13
OGV2	Business	Total	0	339	479	129	55	237	173	760
OGV2	Commuting	2019	-0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	1	0	0	1	1	2
OGV2	Commuting	Total	0	59	83	22	9	41	30	132
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	0	0	1
OGV2	Other	Total	0	34	48	13	5	24	17	76

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	400	1000	715	411	1306	899	765
Car	Business	2034	12	509	1099	736	415	1417	1094	783
Car	Business	Total	550	22529	49682	33583	19009	64179	48741	35805
Car	Commuting	2019	40	3014	4653	2555	1285	4471	1828	1662
Car	Commuting	2034	25	2672	4276	2473	1157	4395	1898	1627
Car	Commuting	Total	1211	119274	189673	108704	51499	192692	82474	71392
Car	Other	2019	41	972	1357	743	413	1069	1087	531
Car	Other	2034	50	1328	1487	823	471	1333	1249	464
Car	Other	Total	2110	55493	64065	35390	20178	56364	53431	20773
LGV	Business	2019	18	434	462	190	108	332	360	235
LGV	Business	2034	18	529	554	213	118	370	399	233
LGV	Business	Total	838	23565	24745	9605	5331	16706	18027	10712
LGV	Commuting	2019	8	189	201	83	47	144	157	102
LGV	Commuting	2034	8	217	227	87	48	152	163	96

Blue Route Option - 60 year

LGV	Commuting	Total	330	9268	9734	3781	2099	6578	7098	4224
LGV	Other	2019	2	59	63	26	15	45	49	32
LGV	Other	2034	2	68	71	27	15	48	51	30
LGV	Other	Total	103	2903	3049	1184	658	2060	2223	1323
OGV1	Business	2019	-0	106	144	44	18	82	54	261
OGV1	Business	2034	0	117	170	51	22	84	63	274
OGV1	Business	Total	2	5299	7620	2274	972	3860	2834	12460
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	110	136	41	16	80	54	259
OGV2	Business	2034	0	119	170	45	19	82	61	264
OGV2	Business	Total	2	5377	7534	2048	860	3760	2743	12078
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	402	992	703	405	1284	878	753
Car	Business	2034	12	512	1096	728	412	1401	1073	771
Car	Business	Total	555	22645	49523	33260	18884	63540	47971	35328
Car	Commuting	2019	44	3357	4933	2427	1353	3882	1193	1637
Car	Commuting	2034	28	2925	4440	2350	1202	4069	1404	1566
Car	Commuting	Total	1338	129320	196569	104116	53333	178831	63169	69367
Car	Other	2019	45	1056	1243	629	380	516	858	521
Car	Other	2034	54	1395	1383	715	434	726	1094	455
Car	Other	Total	2285	58085	60139	31363	18842	34170	47173	20423
LGV	Business	2019	18	439	463	184	105	327	357	233
LGV	Business	2034	19	535	555	208	115	363	392	230
LGV	Business	Total	847	23781	24773	9418	5231	16445	17773	10612
LGV	Commuting	2019	8	191	203	84	47	145	158	103
LGV	Commuting	2034	8	219	229	88	49	153	164	96
LGV	Commuting	Total	333	9346	9815	3813	2116	6618	7127	4237
LGV	Other	2019	2	60	64	26	15	46	49	32
LGV	Other	2034	2	69	72	28	15	48	51	30
LGV	Other	Total	104	2928	3075	1195	663	2073	2233	1327
OGV1	Business	2019	-0	123	160	47	20	90	60	285
OGV1	Business	2034	0	131	184	54	23	90	66	292
OGV1	Business	Total	1	5815	8160	2399	1018	4090	2956	13181
OGV1	Commuting	2019	-0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	8	13	4	2	5	3	9
OGV1	Other	2019	-0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	3	6	2	1	2	1	4
OGV2	Business	2019	-0	144	169	48	19	95	64	308
OGV2	Business	2034	0	144	198	52	22	94	68	303
OGV2	Business	Total	1	6384	8611	2286	964	4210	3038	13577
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	2.83%	3.75%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	860033	860033	0
Vehicle operating costs	-20543	-20543	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Blue Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	839491	839491	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	321307	321307	0
Vehicle operating costs	-35210	-35210	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	286097	286097	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	453331	383609	69723	0	0
Vehicle operating costs	3945	-3024	6969	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	457276	380584	76692	0	0

Private Sector Provider Impacts					
Revenue	0	0	0	0	0
Operating costs	0	0	0	0	0
Investment costs	0	0	0	0	0
Grant/subsidy	0	0	0	0	0
Subtotal	0	0	0	0	0

Other business Impacts					
Developer contributions	0	0	0	0	0
NET BUSINESS IMPACT	457276				

TOTAL			
Present Value of Transport Economic Efficiency Benefits (TEE)	1582864		

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	30685	30685	0
Investment costs	426986	426986	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	457671	457671	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	2473	2473	0

TOTALS			
Broad Transport Budget	457671	457671	0
Wider Public Finances	2473	2473	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	50
Economic Efficiency: Consumer Users (Commuting)	839491
Economic Efficiency: Consumer Users (Other)	286097
Economic Efficiency: Business Users and Providers	457276
Wider Public Finances (Indirect Taxation Revenues)	-2473
Present Value of Benefits (PVB)	1580441
Broad Transport Budget	457671
Present Value of Costs (PVC)	457671

OVERALL IMPACTS

Blue Route Option - 60 year

Net Present Value (NPV)	1122770
Benefit to Cost Ratio (BCR)	3.453

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Blue_V2 60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\BLUE_60.OUT

Elapsed time :

Green Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Mon Aug 31, 2015 at 11:43:25

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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153027 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
292	79	1	Car	Other	All	2034	0.040	0.106	0.378	0.816	0.587
292	79	1	Car	Business	All	2034	0.040	0.106	0.379	0.043	0.032
59	133	1	Car	Other	All	2034	0.034	0.080	0.421	0.036	0.029
59	133	1	Car	Commuting	All	2034	0.034	0.080	0.421	0.006	0.006
59	133	1	Car	Business	All	2034	0.034	0.080	0.421	0.001	0.001

Displayed 5 warnings of a total of 56 of this type.

Warning (98 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
166	100	1	LGV	Business	All	2034	0.554	0.159	3.487	0.003	0.003
166	100	1	LGV	Commuting	All	2034	0.554	0.159	3.487	0.003	0.003
166	100	1	LGV	Other	All	2034	0.554	0.159	3.487	0.003	0.003

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166	100	1	Car	Other	All	2034	0.552	0.159	3.477	0.004	0.060
166	100	1	Car	Business	All	2034	0.552	0.159	3.475	0.001	0.006

Displayed 5 warnings of a total of 114279 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
151	67	1	Car	Other	All	2034	6.249	18.270	0.342	0.023	0.039
151	67	1	LGV	Other	All	2034	6.250	18.270	0.342	0.019	0.019
151	67	1	Car	Business	All	2034	6.250	18.270	0.342	0.025	0.028
151	67	1	LGV	Business	All	2034	6.250	18.270	0.342	0.019	0.019
151	67	1	LGV	Commuting	All	2034	6.250	18.270	0.342	0.019	0.019

Displayed 5 warnings of a total of 35501 of this type.

Warning (2668 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
131	169	1	OGV1	Commuting	All	2034	2.351	0.732	3.212	0.001	0.001
131	169	1	OGV1	Other	All	2034	2.351	0.732	3.212	0.001	0.001
131	169	1	OGV1	Business	All	2034	2.351	0.732	3.212	0.001	0.001
133	53	1	LGV	Business	All	2019	3.492	1.153	3.029	0.004	0.004
133	53	1	LGV	Other	All	2019	3.492	1.153	3.029	0.004	0.004

Displayed 5 warnings of a total of 2668 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV2	Business	All	2019	0.833	0.198	4.216	0.003
79	8	1	OGV2	Commuting	All	2019	0.833	0.198	4.216	0.001
79	8	1	OGV2	Other	All	2019	0.833	0.198	4.216	0.000
79	8	1	OGV2	Business	All	2034	0.903	0.210	4.306	0.004
79	8	1	OGV2	Commuting	All	2034	0.903	0.210	4.306	0.001

Displayed 5 warnings of a total of 70 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

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VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour

*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

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VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

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2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)
 *% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)
 *% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)
 *%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)
 *%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

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2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Green Route Option - 30 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Green Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Green Route Option - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Green Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Green Route Option - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)
*% change p.a.

```

*Start_yr   End_yr   Submode    final    intermediate
2010        2010     1           5.0      6.5
2011        2080     1           0.0      0.0
2010        2010     2           7.9     10.3
2011        2080     2           0.0      0.0
2010        2010     3           7.9     10.3
2011        2080     3           0.0      0.0
2010        2010     4           7.9     10.3
2011        2080     4           0.0      0.0
2010        2010     5           7.9     10.3
2011        2080     5           0.0      0.0
2010        2010     6           7.9     10.3
2011        2080     6           0.0      0.0
2010        2010     7           0.0      0.0
2011        2080     7           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)
*% change p.a.

```

*Start_yr   End_yr   Submode    final    intermediate
2011        2011     1          14.3      0.0
2011        2011     2          14.3      0.0
2011        2011     3          14.3      0.0
2011        2011     4          14.3      0.0
2011        2011     5          14.3      0.0
2011        2011     6          14.3      0.0
2011        2011     7           0.0      0.0
2011        2011     8           0.0      0.0
2012        2100     1           0.0      0.0
2012        2100     2           0.0      0.0
2012        2100     3           0.0      0.0
2012        2100     4           0.0      0.0
2012        2100     5           0.0      0.0
2012        2100     6           0.0      0.0
2012        2100     7           0.0      0.0
2012        2100     8           0.0      0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1                1        12.0     10.3
1                2        42.9     42.2
1                3        45.1     47.5
2                1        40.2     50.3
2                2        45.1     35.1
2                3        14.7     14.6
3                1        75.6     81.3
3                2        17.0     11.1
3                3         7.4      7.6
4                1        79.7     86.9
4                2        13.2      7.8
4                3         7.1      5.3
5                1        10.2     10.2
5                2        18.9     18.9
5                3        70.8     70.8
6                1        10.2     10.2
6                2        18.9     18.9
6                3        70.8     70.8
7                1        10.2     10.2
7                2        18.9     18.9
7                3        70.8     70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1                1        18.1     13.0     19.9     12.3     3.2
    
```

Green Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Green Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	432312	432312
Road	2020	0	1171	1171
Road	2021	0	1126	1126
Road	2022	0	1120	1120
Road	2023	0	1077	1077
Road	2024	0	1036	1036
Road	2025	0	1029	1029
Road	2026	0	989	989
Road	2027	0	951	951
Road	2028	0	915	915
Road	2029	0	908	908
Road	2030	0	873	873
Road	2031	0	840	840
Road	2032	0	832	832
Road	2033	0	800	800
Road	2034	0	770	770
Road	2035	0	762	762
Road	2036	0	733	733
Road	2037	0	705	705
Road	2038	0	698	698
Road	2039	0	671	671
Road	2040	0	645	645
Road	2041	0	638	638
Road	2042	0	614	614
Road	2043	0	606	606
Road	2044	0	583	583
Road	2045	0	561	561
Road	2046	0	554	554
Road	2047	0	532	532
Road	2048	0	512	512
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Green Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	455565	455565
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112092
Car	2019	All	113832	112092
Car	2034	AM Hour 8-9	127298	125432
Car	2034	All	127298	125432
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127419
All	2019	All	129159	127419
All	2034	AM Hour 8-9	144161	142294
All	2034	All	144161	142294

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	979059	0	4553	211803
Road	2034	820412	0	3541	128265	796714	0	3320	131362

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3486	1157
Car	2034	4630	1659	4332	1552
LGV	2019	85	480	81	458
LGV	2034	97	549	91	516
OGV1	2019	53	302	52	294
OGV1	2034	59	332	56	320
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3619	1909
All	2034	4785	2539	4480	2388
Car	Total	137617	48941	128992	45872
LGV	Total	2904	16455	2741	15531
OGV1	Total	1773	10047	1713	9709
OGV2	Total	0	0	0	0
All	Total	142294	75442	133446	71111

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3017	-184	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3832	-263	127	119	-8	17	16	-1	17	16	-1
LGV	2019	397	379	-18	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	427	-27	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	243	-7	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	265	-10	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3640	-209	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3736	-217	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3835	-225	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3937	-234	116	109	-6	28	26	-2	28	26	-2

Green Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3640	-209	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4524	-300	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	134745	-8658	4499	4227	-272	622	585	-37	622	585	-37

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	39586	0	327	-3273	0	-47
Road	2020	39946	0	330	-3276	0	-47
Road	2021	40112	0	333	-3273	0	-47
Road	2022	40252	0	336	-3266	0	-47
Road	2023	40366	0	339	-3255	0	-47
Road	2024	40456	0	342	-3240	0	-47
Road	2025	40523	0	338	-3221	0	-45
Road	2026	40568	0	334	-3199	0	-43
Road	2027	40591	0	330	-3173	0	-41
Road	2028	40594	0	326	-3145	0	-39
Road	2029	40577	0	322	-3115	0	-37
Road	2030	40542	0	318	-3082	0	-35
Road	2031	40488	0	312	-3047	0	-33
Road	2032	40418	0	306	-3010	0	-32
Road	2033	40332	0	300	-2971	0	-30
Road	2034	40230	0	294	-2931	0	-29
Road	2035	39345	0	283	-2819	0	-28
Road	2036	38480	0	272	-2710	0	-27
Road	2037	37634	0	261	-2606	0	-26
Road	2038	36807	0	251	-2506	0	-25
Road	2039	35998	0	242	-2409	0	-24
Road	2040	35207	0	232	-2317	0	-23
Road	2041	34434	0	223	-2228	0	-22
Road	2042	33677	0	215	-2142	0	-21
Road	2043	32938	0	206	-2059	0	-20
Road	2044	32214	0	199	-1980	0	-20
Road	2045	31507	0	191	-1904	0	-19
Road	2046	30815	0	184	-1831	0	-18
Road	2047	30139	0	177	-1760	0	-17
Road	2048	29477	0	170	-1693	0	-17
Road	2049	28830	0	163	-1628	0	-16
Road	Total	1153083	0	8455	-83069	0	-965

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	34404	0	300	-3421	0	-33
Car	2034	34541	0	270	-3035	0	-18
LGV	2019	3720	0	20	-49	0	-10
LGV	2034	4102	0	18	-58	0	-8
OGV1	2019	739	0	7	62	0	-4
OGV1	2034	799	0	6	51	0	-3
OGV2	2019	723	0	0	135	0	0
OGV2	2034	788	0	0	110	0	0
All	2019	39586	0	327	-3273	0	-47

Green Route Option - 30 year

All	2034	40230	0	294	-2931	0	-29
Car	Total	992170	0	7771	-86218	0	-643
LGV	Total	115770	0	502	-1536	0	-237
OGV1	Total	22746	0	182	1482	0	-85
OGV2	Total	22397	0	0	3204	0	0
All	Total	1153082	0	8455	-83069	0	-965

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	39586	0	327	-3273	-47
All	2034	40230	0	294	-2931	-29
All	Total	1153082	0	8455	-83069	-965

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	10381	0	36	-105	-16
Business	2034	11378	0	34	-122	-14
Commuting	2019	20948	0	218	-1437	-60
Commuting	2034	19440	0	184	-1212	-45
Other	2019	8257	0	73	-1731	30
Other	2034	9411	0	76	-1597	30
Business	Total	322902	0	961	-3251	-405
Commuting	Total	568546	0	5393	-34911	-1372
Other	Total	261634	0	2101	-44907	812

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	39586	0	327	-3273	-47
AM Hour 8-9	2034	40230	0	294	-2931	-29
AM Hour 8-9	Total	1153082	0	8455	-83069	-965

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-0	-12	40	62	150
Car	Business	2034	0	-0	-8	57	87	213
Car	Business	Total	0	-0	-267	1622	2491	6088
Car	Commuting	2019	-0	-1	-41	250	614	1091
Car	Commuting	2034	0	-2	-36	298	712	1520
Car	Commuting	Total	-1	-61	-1160	8848	21285	43683
Car	Other	2019	0	-1	-118	278	259	419
Car	Other	2034	0	-2	-87	480	388	576
Car	Other	Total	0	-51	-2952	13263	11004	16595
LGV	Business	2019	-0	-0	-7	27	27	40
LGV	Business	2034	0	-0	-5	40	39	57
LGV	Business	Total	-0	-2	-175	1135	1103	1631
LGV	Commuting	2019	-0	-0	-8	31	31	45
LGV	Commuting	2034	0	-0	-6	45	44	65
LGV	Commuting	Total	-0	-3	-199	1291	1256	1856
LGV	Other	2019	-0	-0	-3	11	11	16
LGV	Other	2034	0	-0	-2	16	15	22
LGV	Other	Total	-0	-1	-69	445	433	639
OGV1	Business	2019	-0	-0	-2	6	8	15
OGV1	Business	2034	-0	-0	-2	8	12	21
OGV1	Business	Total	-1	-0	-50	222	342	602
OGV1	Commuting	2019	-0	-0	-0	1	2	4
OGV1	Commuting	2034	-0	-0	-0	2	3	5
OGV1	Commuting	Total	-0	-0	-13	57	88	154
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	2
OGV1	Other	Total	-0	-0	-6	25	39	69
OGV2	Business	2019	-0	-0	-2	6	7	15
OGV2	Business	2034	-0	-0	-2	8	12	21
OGV2	Business	Total	-1	-1	-51	221	333	597
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-0	-0	-9	38	58	104
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-0	-5	22	33	60

Green Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-2	-321	1097	1698	4078
Car	Business	2034	0	-8	-154	1157	1774	4354
Car	Business	Total	0	-182	-5690	33149	50927	124336
Car	Commuting	2019	-1	-9	-432	2599	6396	11365
Car	Commuting	2034	0	-17	-265	2194	5243	11193
Car	Commuting	Total	-7	-438	-8814	65868	158727	322331
Car	Other	2019	0	-5	-1114	2631	2456	3966
Car	Other	2034	0	-14	-585	3214	2599	3855
Car	Other	Total	0	-329	-20606	87979	73528	111391
LGV	Business	2019	-0	-2	-189	744	735	1080
LGV	Business	2034	0	-2	-106	816	790	1169
LGV	Business	Total	-0	-51	-3690	23148	22531	33282
LGV	Commuting	2019	-0	-1	-82	323	320	469
LGV	Commuting	2034	0	-1	-43	334	324	479
LGV	Commuting	Total	-0	-21	-1526	9505	9253	13668
LGV	Other	2019	-0	-0	-26	101	100	147
LGV	Other	2034	0	-0	-14	105	101	150
LGV	Other	Total	-0	-7	-478	2977	2898	4281
OGV1	Business	2019	-2	-0	-46	156	217	415
OGV1	Business	2034	-0	-0	-33	157	248	427
OGV1	Business	Total	-16	-7	-1049	4538	6968	12312
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-2	-1	-48	163	194	418
OGV2	Business	2034	-0	-0	-33	154	246	422
OGV2	Business	Total	-27	-13	-1069	4536	6751	12219
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-2	-325	1086	1555	4006
Car	Business	2034	0	-8	-155	1150	1650	4282
Car	Business	Total	0	-178	-5740	32931	47381	122370
Car	Commuting	2019	-0	-5	196	4177	6177	8144
Car	Commuting	2034	0	-12	163	3395	5265	8500
Car	Commuting	Total	-2	-292	4323	101507	157737	244617
Car	Other	2019	0	-1	-699	2954	1461	2559
Car	Other	2034	0	-13	-327	3396	1756	2733
Car	Other	Total	0	-291	-12454	93962	49283	78567
LGV	Business	2019	-0	-1	-192	748	713	1059
LGV	Business	2034	0	-1	-107	820	764	1141
LGV	Business	Total	-0	-33	-3721	23255	21832	32550
LGV	Commuting	2019	-0	-1	-83	327	323	473
LGV	Commuting	2034	0	-1	-44	337	326	482
LGV	Commuting	Total	-0	-21	-1538	9587	9326	13754
LGV	Other	2019	-0	-0	-26	102	101	148
LGV	Other	2034	0	-0	-14	106	102	151
LGV	Other	Total	-0	-7	-482	3004	2922	4309
OGV1	Business	2019	-2	-0	-50	173	235	451
OGV1	Business	2034	-0	-0	-35	170	265	455
OGV1	Business	Total	-14	-6	-1111	4928	7443	13123
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-2	7	10	16
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	3	4	7
OGV2	Business	2019	-2	-1	-56	197	230	489
OGV2	Business	2034	-0	-0	-37	179	282	475
OGV2	Business	Total	-22	-10	-1194	5283	7750	13795
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Green Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	14	28	26	18	66	50	37
Car	Business	2034	1	24	45	36	24	93	77	49
Car	Business	Total	17	668	1255	1035	702	2662	2170	1416
Car	Commuting	2019	4	277	383	228	130	488	210	193
Car	Commuting	2034	3	319	485	304	160	657	304	259
Car	Commuting	Total	99	9557	14218	8825	4713	19017	8670	7496
Car	Other	2019	4	105	141	99	64	184	172	69
Car	Other	2034	8	206	231	156	96	299	275	84
Car	Other	Total	212	5569	6434	4372	2730	8350	7701	2491
LGV	Business	2019	1	15	15	8	5	16	17	10
LGV	Business	2034	1	25	25	12	7	23	24	14
LGV	Business	Total	26	703	685	338	204	646	692	397
LGV	Commuting	2019	1	17	17	9	6	18	19	12
LGV	Commuting	2034	1	29	28	13	8	26	28	16
LGV	Commuting	Total	30	800	780	385	232	736	788	452
LGV	Other	2019	0	6	6	3	2	6	6	4
LGV	Other	2034	0	10	10	5	3	9	10	5
LGV	Other	Total	10	276	269	133	80	253	271	156
OGV1	Business	2019	0	2	4	2	1	4	2	12
OGV1	Business	2034	0	4	7	3	1	5	3	16
OGV1	Business	Total	1	104	198	73	36	141	94	467
OGV1	Commuting	2019	0	1	1	0	0	1	1	3
OGV1	Commuting	2034	0	1	2	1	0	1	1	4
OGV1	Commuting	Total	0	27	51	19	9	36	24	119
OGV1	Other	2019	0	0	0	0	0	0	0	1
OGV1	Other	2034	0	0	1	0	0	1	0	2
OGV1	Other	Total	0	12	23	8	4	16	11	53
OGV2	Business	2019	0	2	4	1	1	3	2	12
OGV2	Business	2034	0	4	7	2	1	5	3	16
OGV2	Business	Total	1	104	199	64	34	136	95	464
OGV2	Commuting	2019	0	0	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	1	0	0	1	1	3
OGV2	Commuting	Total	0	18	35	11	6	24	16	81
OGV2	Other	2019	0	0	0	0	0	0	0	1
OGV2	Other	2034	0	0	1	0	0	0	0	2
OGV2	Other	Total	0	10	20	6	3	14	10	47

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	393	775	702	502	1810	1356	1000
Car	Business	2034	11	492	914	738	494	1897	1578	999
Car	Business	Total	340	13546	25516	21154	14396	54412	44164	29012
Car	Commuting	2019	39	2888	3990	2375	1355	5077	2186	2009
Car	Commuting	2034	22	2350	3572	2242	1176	4841	2239	1906
Car	Commuting	Total	756	71300	105476	65271	35025	140578	63836	55425
Car	Other	2019	41	993	1338	938	606	1742	1627	649
Car	Other	2034	52	1377	1544	1042	646	2002	1841	566
Car	Other	Total	1405	36723	42803	29139	18233	55555	51277	16827
LGV	Business	2019	18	414	398	223	144	437	452	283
LGV	Business	2034	18	517	506	243	144	461	498	280
LGV	Business	Total	536	14254	13885	6900	4179	13206	14118	8142
LGV	Commuting	2019	8	180	173	97	63	190	196	123
LGV	Commuting	2034	8	212	207	99	59	189	204	115
LGV	Commuting	Total	220	5846	5694	2834	1717	5424	5797	3346
LGV	Other	2019	2	56	54	30	20	59	61	38
LGV	Other	2034	2	66	65	31	18	59	64	36
LGV	Other	Total	69	1831	1783	888	538	1699	1816	1048
OGV1	Business	2019	1	55	116	46	25	101	64	332
OGV1	Business	2034	1	78	146	53	26	99	67	329
OGV1	Business	Total	22	2105	4012	1495	746	2882	1914	9570
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	1	57	112	40	21	94	62	336

Green Route Option - 30 year

OGV2	Business	2034	1	78	148	46	25	97	68	325
OGV2	Business	Total	22	2113	4033	1298	695	2785	1934	9518
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	395	757	675	492	1753	1271	964
Car	Business	2034	12	495	903	719	487	1847	1492	965
Car	Business	Total	344	13632	25152	20588	14190	53004	41799	28054
Car	Commuting	2019	44	3200	4275	2237	1446	4205	1313	1968
Car	Commuting	2034	25	2587	3712	2101	1230	4277	1566	1812
Car	Commuting	Total	857	78357	110345	61422	36771	122983	43958	53196
Car	Other	2019	46	1054	1199	780	557	762	1243	633
Car	Other	2034	57	1436	1422	900	598	1069	1515	547
Car	Other	Total	1547	38365	39336	25136	16905	29539	41898	16342
LGV	Business	2019	19	418	394	210	139	423	443	281
LGV	Business	2034	19	523	503	234	140	445	480	273
LGV	Business	Total	543	14403	13805	6620	4065	12788	13677	7981
LGV	Commuting	2019	8	182	175	98	63	191	197	123
LGV	Commuting	2034	8	214	209	100	59	190	205	115
LGV	Commuting	Total	222	5902	5749	2862	1733	5461	5822	3356
LGV	Other	2019	3	57	55	31	20	60	62	39
LGV	Other	2034	2	67	66	31	19	60	64	36
LGV	Other	Total	70	1849	1801	897	543	1711	1824	1051
OGV1	Business	2019	1	62	128	48	26	109	70	364
OGV1	Business	2034	1	86	157	56	27	104	70	353
OGV1	Business	Total	24	2304	4324	1566	787	3053	2031	10276
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	4	8	3	1	5	2	8
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	2	4	1	1	2	1	3
OGV2	Business	2019	1	71	134	46	25	109	72	399
OGV2	Business	2034	1	92	171	51	28	108	76	373
OGV2	Business	Total	25	2496	4653	1437	779	3120	2158	10933
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	2019	2034
Road	3.01%	3.95%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus		
Travel Time	568546	568546	0		
Vehicle operating costs	-29518	-29518	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - COMMUTING BENEFITS	539028	539028	0		
Consumer - Other user benefits	All Modes	Road	Bus		
Travel Time	261634	261634	0		
Vehicle operating costs	-42806	-42806	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - OTHER BENEFITS	218828	218828	0		
Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	322902	277759	45143	0	0
Vehicle operating costs	-2290	-7113	4823	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0

Green Route Option - 30 year

Subtotal	320612	270647	49966	0	0
Private Sector Provider Impacts					
Revenue	0		0		0
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	0		0		0
Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	320612				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1078468				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport			
Revenue	0	0	0
Operating costs	24470	24470	0
Investment costs	431094	431094	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	455565	455565	0
Central Government Funding: Non-Transport			
Indirect Tax Revenues	965	965	0
TOTALS			
Broad Transport Budget	455565	455565	0
Wider Public Finances	965	965	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	37
Economic Efficiency: Consumer Users (Commuting)	539028
Economic Efficiency: Consumer Users (Other)	218828
Economic Efficiency: Business Users and Providers	320612
Wider Public Finances (Indirect Taxation Revenues)	-965
Present Value of Benefits (PVB)	1077540
Broad Transport Budget	455565
Present Value of Costs (PVC)	455565
OVERALL IMPACTS	
Net Present Value (NPV)	621975
Benefit to Cost Ratio (BCR)	2.365

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Green_V2 30.txt

Green Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\GREEN_30.OUT

Elapsed time :

Green Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:07:32

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 153027 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
292	79	1	Car	Other	All	2034	0.040	0.106	0.378	0.816	0.587
292	79	1	Car	Business	All	2034	0.040	0.106	0.379	0.043	0.032
59	133	1	Car	Other	All	2034	0.034	0.080	0.421	0.036	0.029
59	133	1	Car	Commuting	All	2034	0.034	0.080	0.421	0.006	0.006
59	133	1	Car	Business	All	2034	0.034	0.080	0.421	0.001	0.001

Displayed 5 warnings of a total of 56 of this type.

Warning (98 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
166	100	1	LGV	Business	All	2034	0.554	0.159	3.487	0.003	0.003
166	100	1	LGV	Commuting	All	2034	0.554	0.159	3.487	0.003	0.003
166	100	1	LGV	Other	All	2034	0.554	0.159	3.487	0.003	0.003

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166	100	1	Car	Other	All	2034	0.552	0.159	3.477	0.004	0.060
166	100	1	Car	Business	All	2034	0.552	0.159	3.475	0.001	0.006

Displayed 5 warnings of a total of 114279 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
151	67	1	Car	Other	All	2034	6.249	18.270	0.342	0.023	0.039
151	67	1	LGV	Other	All	2034	6.250	18.270	0.342	0.019	0.019
151	67	1	Car	Business	All	2034	6.250	18.270	0.342	0.025	0.028
151	67	1	LGV	Business	All	2034	6.250	18.270	0.342	0.019	0.019
151	67	1	LGV	Commuting	All	2034	6.250	18.270	0.342	0.019	0.019

Displayed 5 warnings of a total of 35501 of this type.

Warning (2668 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
131	169	1	OGV1	Commuting	All	2034	2.351	0.732	3.212	0.001	0.001
131	169	1	OGV1	Other	All	2034	2.351	0.732	3.212	0.001	0.001
131	169	1	OGV1	Business	All	2034	2.351	0.732	3.212	0.001	0.001
133	53	1	LGV	Business	All	2019	3.492	1.153	3.029	0.004	0.004
133	53	1	LGV	Other	All	2019	3.492	1.153	3.029	0.004	0.004

Displayed 5 warnings of a total of 2668 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV2	Business	All	2019	0.833	0.198	4.216	0.003
79	8	1	OGV2	Commuting	All	2019	0.833	0.198	4.216	0.001
79	8	1	OGV2	Other	All	2019	0.833	0.198	4.216	0.000
79	8	1	OGV2	Business	All	2034	0.903	0.210	4.306	0.004
79	8	1	OGV2	Commuting	All	2034	0.903	0.210	4.306	0.001

Displayed 5 warnings of a total of 70 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```


Green Route Option - 60 year

```

VEHICLE_TYPE/SUBMODE - (used)
*no.   mode  new_mode  P&R  type  description
  1     1     N         N     per   Car
  2     1     N         N     per   LGV
  3     1     N         N     fre   OGV1
  4     1     N         N     fre   OGV2
  5     2     N         N     per   Bus
  6     3     N         N     per   Light Rail
  7     3     N         N     per   Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)
*no.   mode  new_mode  P&R  type  description
  1     1     N         N     per   Car
  2     1     N         N     per   LGV Personal
  3     1     N         N     fre   LGV Freight
  4     1     N         N     fre   OGV1
  5     1     N         N     fre   OGV2
  6     2     N         N     per   Bus
  7     3     N         N     per   Light Rail
  8     3     N         N     per   Heavy rail

FUEL_TYPE - (used)
*no.   name
  1     petrol
  2     diesel

FUEL_TYPE - (std)
*no.   name
  1     Petrol
  2     Diesel
  3     Electric

TIME_PERIODS - (used)
*no.   description  comments
  1     AM Hour 8-9
  2     IP Av Hr 12-14

TIME_PERIODS - (std)
*no.   description  comments
  1     AM peak      (7-10 weekdays)
  2     PM peak      (4-7 weekdays)
  3     Inter-peak   (10-4 weekdays)
  4     Off-peak     (7-7 weekdays)
  5     Weekend      (weekend)

DISCOUNT_RATE - (used)
*% change p.a.
*Start_yr  End_yr  Rate
  1         30   4.00
  31        60   4.00

DISCOUNT_RATE - (std)
*% change p.a.
*Start_yr  End_yr  Rate
  1         30   3.50
  31        75   3.00
  76        80   2.50

VALUE_OF_TIME - (used)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
  1     1         1         2781.0    1308.0    1189.0
  1     1         2         2781.0    1308.0    1189.0
  2     2         1         2781.0    1308.0    1189.0
  2     2         2         2781.0    1308.0    1189.0
  3     3         1         2781.0     0.0     0.0
  3     3         2         2781.0     0.0     0.0
  4     4         1         2781.0     0.0     0.0
  4     4         2         2781.0     0.0     0.0
  5     5         1         2781.0     0.0     0.0
  5     5         2         2781.0    1308.0    1189.0
  6     6         1         2781.0     0.0     0.0
  6     6         2         2781.0    1308.0    1189.0
  7     7         1         2781.0     0.0     0.0
  7     7         2         2781.0    1308.0    1189.0

```

Green Route Option - 60 year

```

VALUE_OF_TIME - (std)
*pence per hour
*Vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Green Route Option - 60 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Green Route Option - 60 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Green Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Green Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Green Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Green Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Green Route Option - 60 year

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*%
*submode      final      intermediate
1             17.5       0.0
2             17.5       0.0
3             17.5       0.0
4             17.5       0.0
5             17.5       0.0
6             17.5       0.0
7             0.0        0.0
8             0.0        0.0

NON_FUEL_TAX_RATES_CHANGES - (used)
*% change p.a.
*Start_yr     End_yr     Submode     final      intermediate
2010          2010         1           5.0        6.5
2011          2080         1           0.0        0.0
2010          2010         2           7.9        10.3
2011          2080         2           0.0        0.0
2010          2010         3           7.9        10.3
2011          2080         3           0.0        0.0
2010          2010         4           7.9        10.3
2011          2080         4           0.0        0.0
2010          2010         5           7.9        10.3
2011          2080         5           0.0        0.0
2010          2010         6           7.9        10.3
2011          2080         6           0.0        0.0
2010          2010         7           0.0        0.0
2011          2080         7           0.0        0.0

NON_FUEL_TAX_RATES_CHANGES - (std)
*% change p.a.
*Start_yr     End_yr     Submode     final      intermediate
2011          2011         1           14.3       0.0
2011          2011         2           14.3       0.0
2011          2011         3           14.3       0.0
2011          2011         4           14.3       0.0
2011          2011         5           14.3       0.0
2011          2011         6           14.3       0.0
2011          2011         7           0.0        0.0
2011          2011         8           0.0        0.0
2012          2100         1           0.0        0.0
2012          2100         2           0.0        0.0
2012          2100         3           0.0        0.0
2012          2100         4           0.0        0.0
2012          2100         5           0.0        0.0
2012          2100         6           0.0        0.0
2012          2100         7           0.0        0.0
2012          2100         8           0.0        0.0

DEFAULT_PURPOSE_SPLIT - (used)
*vtype/submode purpose     Period1 Period2 Period3 Period4 Period5
1             1           12.0    10.3
1             2           42.9    42.2
1             3           45.1    47.5
2             1           40.2    50.3
2             2           45.1    35.1
2             3           14.7    14.6
3             1           75.6    81.3
3             2           17.0    11.1
3             3           7.4     7.6
4             1           79.7    86.9
4             2           13.2    7.8
4             3           7.1     5.3
5             1           10.2    10.2
5             2           18.9    18.9
5             3           70.8    70.8
6             1           10.2    10.2
6             2           18.9    18.9
6             3           70.8    70.8
7             1           10.2    10.2
7             2           18.9    18.9
7             3           70.8    70.8

DEFAULT_PURPOSE_SPLIT - (std)
*vtype/submode purpose     Period1 Period2 Period3 Period4 Period5
1             1           18.1    13.0   19.9   12.3   3.2

```

Green Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Green Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	432312	432312
Road	2020	0	1171	1171
Road	2021	0	1126	1126
Road	2022	0	1120	1120
Road	2023	0	1077	1077
Road	2024	0	1036	1036
Road	2025	0	1029	1029
Road	2026	0	989	989
Road	2027	0	951	951
Road	2028	0	915	915
Road	2029	0	908	908
Road	2030	0	873	873
Road	2031	0	840	840
Road	2032	0	832	832
Road	2033	0	800	800
Road	2034	0	770	770
Road	2035	0	762	762
Road	2036	0	733	733
Road	2037	0	705	705
Road	2038	0	698	698
Road	2039	0	671	671
Road	2040	0	645	645
Road	2041	0	638	638
Road	2042	0	614	614
Road	2043	0	606	606
Road	2044	0	583	583
Road	2045	0	561	561
Road	2046	0	554	554
Road	2047	0	532	532
Road	2048	0	512	512
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Green Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	455565	455565
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112092
Car	2019	All	113832	112092
Car	2034	AM Hour 8-9	127298	125432
Car	2034	All	127298	125432
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127419
All	2019	All	129159	127419
All	2034	AM Hour 8-9	144161	142294
All	2034	All	144161	142294

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	979059	0	4553	211803
Road	2034	820412	0	3541	128265	796714	0	3320	131362

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3486	1157
Car	2034	4630	1659	4332	1552
LGV	2019	85	480	81	458
LGV	2034	97	549	91	516
OGV1	2019	53	302	52	294
OGV1	2034	59	332	56	320
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3619	1909
All	2034	4785	2539	4480	2388
Car	Total	276503	98698	258965	92436
LGV	Total	5808	32910	5472	31007
OGV1	Total	3529	20000	3407	19304
OGV2	Total	0	0	0	0
All	Total	285839	151607	267843	142747

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3017	-184	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3832	-263	127	119	-8	17	16	-1	17	16	-1
LGV	2019	397	379	-18	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	427	-27	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	243	-7	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	265	-10	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3640	-209	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3736	-217	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3835	-225	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3937	-234	116	109	-6	28	26	-2	28	26	-2

Green Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3640	-209	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4524	-300	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	270461	-17648	10560	9911	-649	815	766	-49	815	766	-49

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Green Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User Time	User_Charges PT_fares_pri	Vehicle_Operating_Cost Fuel	Operator_Rev Non_fuel	Operator_Rev PT_fares_pri	Indirect Taxes
Road	2019	39586	0	327	-3273	0	-47
Road	2020	39946	0	330	-3276	0	-47
Road	2021	40112	0	333	-3273	0	-47
Road	2022	40252	0	336	-3266	0	-47
Road	2023	40366	0	339	-3255	0	-47
Road	2024	40456	0	342	-3240	0	-47
Road	2025	40523	0	338	-3221	0	-45
Road	2026	40568	0	334	-3199	0	-43
Road	2027	40591	0	330	-3173	0	-41
Road	2028	40594	0	326	-3145	0	-39
Road	2029	40577	0	322	-3115	0	-37
Road	2030	40542	0	318	-3082	0	-35
Road	2031	40488	0	312	-3047	0	-33
Road	2032	40418	0	306	-3010	0	-32
Road	2033	40332	0	300	-2971	0	-30
Road	2034	40230	0	294	-2931	0	-29
Road	2035	39345	0	283	-2819	0	-28
Road	2036	38480	0	272	-2710	0	-27
Road	2037	37634	0	261	-2606	0	-26
Road	2038	36807	0	251	-2506	0	-25
Road	2039	35998	0	242	-2409	0	-24
Road	2040	35207	0	232	-2317	0	-23
Road	2041	34434	0	223	-2228	0	-22
Road	2042	33677	0	215	-2142	0	-21
Road	2043	32938	0	206	-2059	0	-20
Road	2044	32214	0	199	-1980	0	-20
Road	2045	31507	0	191	-1904	0	-19
Road	2046	30815	0	184	-1831	0	-18
Road	2047	30139	0	177	-1760	0	-17
Road	2048	29477	0	170	-1693	0	-17
Road	2049	28830	0	163	-1628	0	-16
Road	2050	28198	0	157	-1565	0	-15
Road	2051	27579	0	151	-1505	0	-15
Road	2052	26974	0	145	-1447	0	-14
Road	2053	26382	0	139	-1391	0	-14
Road	2054	25804	0	134	-1338	0	-13
Road	2055	25238	0	129	-1286	0	-13
Road	2056	24685	0	124	-1237	0	-12
Road	2057	24144	0	119	-1189	0	-12
Road	2058	23614	0	115	-1144	0	-11
Road	2059	23097	0	110	-1100	0	-11
Road	2060	22591	0	106	-1057	0	-10
Road	2061	22096	0	102	-1017	0	-10
Road	2062	21612	0	98	-978	0	-10
Road	2063	21139	0	94	-940	0	-9
Road	2064	20676	0	91	-904	0	-9
Road	2065	20223	0	87	-869	0	-9
Road	2066	19780	0	84	-836	0	-8
Road	2067	19347	0	81	-803	0	-8
Road	2068	18924	0	77	-773	0	-8
Road	2069	18510	0	74	-743	0	-7
Road	2070	18105	0	72	-714	0	-7
Road	2071	17709	0	69	-687	0	-7
Road	2072	17322	0	66	-660	0	-7
Road	2073	16943	0	64	-635	0	-6
Road	2074	16572	0	61	-611	0	-6
Road	2075	16210	0	59	-587	0	-6
Road	2076	15856	0	57	-564	0	-6
Road	2077	15509	0	54	-543	0	-5
Road	2078	15170	0	52	-522	0	-5
Road	2079	15432	0	52	-522	0	-5
Road	Total	1778523	0	11279	-111234	0	-1243

Green Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	34404	0	300	-3421	0	-33
Car	2034	34541	0	270	-3035	0	-18
LGV	2019	3720	0	20	-49	0	-10
LGV	2034	4102	0	18	-58	0	-8
OGV1	2019	739	0	7	62	0	-4
OGV1	2034	799	0	6	51	0	-3
OGV2	2019	723	0	0	135	0	0
OGV2	2034	788	0	0	110	0	0
All	2019	39586	0	327	-3273	0	-47
All	2034	40230	0	294	-2931	0	-29
Car	Total	1524380	0	10364	-115376	0	-814
LGV	Total	182267	0	671	-2092	0	-316
OGV1	Total	36201	0	244	1972	0	-114
OGV2	Total	35673	0	0	4263	0	0
All	Total	1778522	0	11279	-111234	0	-1243

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2019	39586	0	327	-3273	0	-47
All	2034	40230	0	294	-2931	0	-29
All	Total	1778522	0	11279	-111234	0	-1243

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2019	10381	0	36	-105	0	-16
Business	2034	11378	0	34	-122	0	-14
Commuting	2019	20948	0	218	-1437	0	-60
Commuting	2034	19440	0	184	-1212	0	-45
Other	2019	8257	0	73	-1731	0	30
Other	2034	9411	0	76	-1597	0	30
Business	Total	514561	0	1287	-4424	0	-539
Commuting	Total	860827	0	7163	-46557	0	-1801
Other	Total	403134	0	2829	-60253	0	1097

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM Hour 8-9	2019	39586	0	327	-3273	0	-47
AM Hour 8-9	2034	40230	0	294	-2931	0	-29
AM Hour 8-9	Total	1778522	0	11279	-111234	0	-1243

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-0	-12	40	62	150
Car	Business	2034	0	-0	-8	57	87	213
Car	Business	Total	0	-20	-492	3318	5090	12467
Car	Commuting	2019	-0	-1	-41	250	614	1091
Car	Commuting	2034	0	-2	-36	298	712	1520
Car	Commuting	Total	-1	-132	-2240	17786	42638	89273
Car	Other	2019	0	-1	-118	278	259	419
Car	Other	2034	0	-2	-87	480	388	576
Car	Other	Total	0	-112	-5574	27663	22650	33868
LGV	Business	2019	-0	-0	-7	27	27	40
LGV	Business	2034	0	-0	-5	40	39	57
LGV	Business	Total	-0	-5	-330	2330	2261	3344
LGV	Commuting	2019	-0	-0	-8	31	31	45
LGV	Commuting	2034	0	-0	-6	45	44	65
LGV	Commuting	Total	-0	-5	-376	2652	2574	3806
LGV	Other	2019	-0	-0	-3	11	11	16
LGV	Other	2034	0	-0	-2	16	15	22
LGV	Other	Total	-0	-2	-130	914	887	1311
OGV1	Business	2019	-0	-0	-2	6	8	15
OGV1	Business	2034	-0	-0	-2	8	12	21
OGV1	Business	Total	-1	-1	-98	451	705	1228
OGV1	Commuting	2019	-0	-0	-0	1	2	4

Green Route Option - 60 year

OGV1	Commuting	2034	-0	-0	-0	2	3	5
OGV1	Commuting	Total	-0	-0	-25	115	180	314
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	2
OGV1	Other	Total	-0	-0	-11	51	80	140
OGV2	Business	2019	-0	-0	-2	6	7	15
OGV2	Business	2034	-0	-0	-2	8	12	21
OGV2	Business	Total	-2	-1	-100	447	693	1215
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-0	-0	-17	78	120	211
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-0	-10	45	70	122

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-2	-321	1097	1698	4078
Car	Business	2034	0	-8	-154	1157	1774	4354
Car	Business	Total	0	-311	-8279	52645	80808	197672
Car	Commuting	2019	-1	-9	-432	2599	6396	11365
Car	Commuting	2034	0	-17	-265	2194	5243	11193
Car	Commuting	Total	-7	-698	-12801	98859	237552	490623
Car	Other	2019	0	-5	-1114	2631	2456	3966
Car	Other	2034	0	-14	-585	3214	2599	3855
Car	Other	Total	0	-535	-29405	136297	112607	169354
LGV	Business	2019	-0	-2	-189	744	735	1080
LGV	Business	2034	0	-2	-106	816	790	1169
LGV	Business	Total	-0	-78	-5479	36888	35840	52981
LGV	Commuting	2019	-0	-1	-82	323	320	469
LGV	Commuting	2034	0	-1	-43	334	324	479
LGV	Commuting	Total	-0	-31	-2180	14527	14118	20867
LGV	Other	2019	-0	-0	-26	101	100	147
LGV	Other	2034	0	-0	-14	105	101	150
LGV	Other	Total	-0	-10	-683	4550	4422	6536
OGV1	Business	2019	-2	-0	-46	156	217	415
OGV1	Business	2034	-0	-0	-33	157	248	427
OGV1	Business	Total	-16	-11	-1600	7175	11142	19511
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-2	-1	-48	163	194	418
OGV2	Business	2034	-0	-0	-33	154	246	422
OGV2	Business	Total	-34	-17	-1627	7131	10890	19330
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-2	-325	1086	1555	4006
Car	Business	2034	0	-8	-155	1150	1650	4282
Car	Business	Total	0	-306	-8340	52360	76070	195022
Car	Commuting	2019	-0	-5	196	4177	6177	8144
Car	Commuting	2034	0	-12	163	3395	5265	8500
Car	Commuting	Total	-2	-499	4448	146036	236772	387031
Car	Other	2019	0	-1	-699	2954	1461	2559
Car	Other	2034	0	-13	-327	3396	1756	2733
Car	Other	Total	0	-490	-18776	144036	80260	125748
LGV	Business	2019	-0	-1	-192	748	713	1059
LGV	Business	2034	0	-1	-107	820	764	1141
LGV	Business	Total	-0	-56	-5514	37032	34889	51974
LGV	Commuting	2019	-0	-1	-83	327	323	473
LGV	Commuting	2034	0	-1	-44	337	326	482
LGV	Commuting	Total	-0	-31	-2196	14636	14214	20982
LGV	Other	2019	-0	-0	-26	102	101	148
LGV	Other	2034	0	-0	-14	106	102	151
LGV	Other	Total	-0	-10	-688	4586	4453	6574

Green Route Option - 60 year

OGV1	Business	2019	-2	-0	-50	173	235	451
OGV1	Business	2034	-0	-0	-35	170	265	455
OGV1	Business	Total	-14	-10	-1679	7692	11781	20585
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-2	9	14	21
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	4	6	9
OGV2	Business	2019	-2	-1	-56	197	230	489
OGV2	Business	2034	-0	-0	-37	179	282	475
OGV2	Business	Total	-29	-13	-1784	8116	12237	21410
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	14	28	26	18	66	50	37
Car	Business	2034	1	24	45	36	24	93	77	49
Car	Business	Total	33	1388	2595	2116	1426	5441	4483	2881
Car	Commuting	2019	4	277	383	228	130	488	210	193
Car	Commuting	2034	3	319	485	304	160	657	304	259
Car	Commuting	Total	189	19129	28765	17956	9502	38735	17787	15261
Car	Other	2019	4	105	141	99	64	184	172	69
Car	Other	2034	8	206	231	156	96	299	275	84
Car	Other	Total	444	11739	13352	9040	5623	17321	15952	5025
LGV	Business	2019	1	15	15	8	5	16	17	10
LGV	Business	2034	1	25	25	12	7	23	24	14
LGV	Business	Total	53	1460	1426	694	415	1322	1422	807
LGV	Commuting	2019	1	17	17	9	6	18	19	12
LGV	Commuting	2034	1	29	28	13	8	26	28	16
LGV	Commuting	Total	61	1662	1623	790	472	1505	1619	919
LGV	Other	2019	0	6	6	3	2	6	6	4
LGV	Other	2034	0	10	10	5	3	9	10	5
LGV	Other	Total	21	573	559	272	163	519	558	317
OGV1	Business	2019	0	2	4	2	1	4	2	12
OGV1	Business	2034	0	4	7	3	1	5	3	16
OGV1	Business	Total	2	219	411	152	75	285	191	949
OGV1	Commuting	2019	0	1	1	0	0	1	1	3
OGV1	Commuting	2034	0	1	2	1	0	1	1	4
OGV1	Commuting	Total	1	56	105	39	19	73	49	243
OGV1	Other	2019	0	0	0	0	0	0	0	1
OGV1	Other	2034	0	0	1	0	0	1	0	2
OGV1	Other	Total	0	25	47	17	9	33	22	108
OGV2	Business	2019	0	2	4	1	1	3	2	12
OGV2	Business	2034	0	4	7	2	1	5	3	16
OGV2	Business	Total	2	219	417	132	70	278	195	940
OGV2	Commuting	2019	0	0	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	1	0	0	1	1	3
OGV2	Commuting	Total	0	38	72	23	12	48	34	163
OGV2	Other	2019	0	0	0	0	0	0	0	1
OGV2	Other	2034	0	0	1	0	0	0	0	2
OGV2	Other	Total	0	22	42	13	7	28	20	94

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	393	775	702	502	1810	1356	1000
Car	Business	2034	11	492	914	738	494	1897	1578	999
Car	Business	Total	534	21830	40919	33584	22717	86362	70743	45846
Car	Commuting	2019	39	2888	3990	2375	1355	5077	2186	2009
Car	Commuting	2034	22	2350	3572	2242	1176	4841	2239	1906
Car	Commuting	Total	1088	106633	159176	98977	52706	213365	97494	84088
Car	Other	2019	41	993	1338	938	606	1742	1627	649
Car	Other	2034	52	1377	1544	1042	646	2002	1841	566
Car	Other	Total	2183	57426	66015	44804	27941	85657	78963	25330
LGV	Business	2019	18	414	398	223	144	437	452	283
LGV	Business	2034	18	517	506	243	144	461	498	280
LGV	Business	Total	847	22966	22406	10988	6604	20975	22510	12855
LGV	Commuting	2019	8	180	173	97	63	190	196	123
LGV	Commuting	2034	8	212	207	99	59	189	204	115

Green Route Option - 60 year

LGV	Commuting	Total	334	9030	8808	4327	2604	8264	8864	5069
LGV	Other	2019	2	56	54	30	20	59	61	38
LGV	Other	2034	2	66	65	31	18	59	64	36
LGV	Other	Total	105	2828	2759	1355	816	2588	2776	1588
OGV1	Business	2019	1	55	116	46	25	101	64	332
OGV1	Business	2034	1	78	146	53	26	99	67	329
OGV1	Business	Total	35	3427	6465	2394	1184	4545	3035	15114
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	1	57	112	40	21	94	62	336
OGV2	Business	2034	1	78	148	46	25	97	68	325
OGV2	Business	Total	35	3427	6530	2078	1112	4414	3082	14995
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	395	757	675	492	1753	1271	964
Car	Business	2034	12	495	903	719	487	1847	1492	965
Car	Business	Total	539	21948	40443	32842	22448	84480	67549	44558
Car	Commuting	2019	44	3200	4275	2237	1446	4205	1313	1968
Car	Commuting	2034	25	2587	3712	2101	1230	4277	1566	1812
Car	Commuting	Total	1222	115970	165395	93773	54971	190349	71151	80956
Car	Other	2019	46	1054	1199	780	557	762	1243	633
Car	Other	2034	57	1436	1422	900	598	1069	1515	547
Car	Other	Total	2374	59632	61379	39441	26151	50679	66450	24670
LGV	Business	2019	19	418	394	210	139	423	443	281
LGV	Business	2034	19	523	503	234	140	445	480	273
LGV	Business	Total	857	23172	22300	10620	6454	20405	21892	12624
LGV	Commuting	2019	8	182	175	98	63	191	197	123
LGV	Commuting	2034	8	214	209	100	59	190	205	115
LGV	Commuting	Total	337	9106	8882	4365	2624	8313	8897	5082
LGV	Other	2019	3	57	55	31	20	60	62	39
LGV	Other	2034	2	67	66	31	19	60	64	36
LGV	Other	Total	106	2853	2783	1368	822	2604	2787	1592
OGV1	Business	2019	1	62	128	48	26	109	70	364
OGV1	Business	2034	1	86	157	56	27	104	70	353
OGV1	Business	Total	38	3696	6886	2490	1239	4771	3189	16046
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	6	11	4	2	6	3	10
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	2	5	2	1	3	1	4
OGV2	Business	2019	1	71	134	46	25	109	72	399
OGV2	Business	2034	1	92	171	51	28	108	76	373
OGV2	Business	Total	40	3944	7366	2263	1224	4855	3378	16866
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	3.01%	3.95%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	860827	860827	0
Vehicle operating costs	-39394	-39394	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Green Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	821433	821433	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	403134	403134	0
Vehicle operating costs	-57423	-57423	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	345711	345711	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	514561	442686	71874	0	0
Vehicle operating costs	-3138	-9555	6418	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	511423	433131	78292	0	0

Private Sector Provider Impacts				
Revenue	0	0	0	0
Operating costs	0	0	0	0
Investment costs	0	0	0	0
Grant/subsidy	0	0	0	0
Subtotal	0	0	0	0

Other business Impacts			
Developer contributions	0	0	0
NET BUSINESS IMPACT	511423		

TOTAL
 Present Value of Transport Economic
 Efficiency Benefits (TEE) 1678567

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	24470	24470	0
Investment costs	431094	431094	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	455565	455565	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	1243	1243	0

TOTALS			
Broad Transport Budget	455565	455565	0
Wider Public Finances	1243	1243	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	49
Economic Efficiency: Consumer Users (Commuting)	821433
Economic Efficiency: Consumer Users (Other)	345711
Economic Efficiency: Business Users and Providers	511423
Wider Public Finances (Indirect Taxation Revenues)	-1243
Present Value of Benefits (PVB)	1677373
Broad Transport Budget	455565
Present Value of Costs (PVC)	455565

OVERALL IMPACTS

Green Route Option - 60 year

Net Present Value (NPV)	1221808
Benefit to Cost Ratio (BCR)	3.682

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Green_V2 60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\GREEN_60.OUT

Elapsed time :

Orange Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:10:23

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 132097 Warnings found

Warning (30 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
127	126	2	Car	Business	All	2034	0.046	0.150	0.306	0.000	0.000
127	126	2	Car	Other	All	2034	0.046	0.150	0.306	0.002	0.001
127	126	2	LGV	Business	All	2034	0.046	0.150	0.306	0.001	0.001
127	126	2	Car	Commuting	All	2034	0.046	0.150	0.306	0.001	0.000
127	126	2	LGV	Commuting	All	2034	0.046	0.150	0.306	0.001	0.001

Displayed 5 warnings of a total of 5380 of this type.

Warning (148 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Other	All	2034	0.232	0.047	4.956	0.005	0.005
79	8	1	OGV2	Commuting	All	2034	0.232	0.047	4.956	0.005	0.005
79	8	1	OGV2	Business	All	2034	0.232	0.047	4.956	0.005	0.005

Orange Route Option - 30 year

79	8	1	OGV1	Business	All	2034	0.231	0.047	4.939	0.005	0.005
79	8	1	OGV1	Other	All	2034	0.231	0.047	4.939	0.005	0.005

Displayed 5 warnings of a total of 102685 of this type.

Warning (515 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
126	61	2	OGV2	Business	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	OGV2	Commuting	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	OGV2	Other	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	LGV	Business	All	2019	0.938	5.249	0.179	0.057	0.057
126	61	2	LGV	Other	All	2019	0.938	5.249	0.179	0.057	0.057

Displayed 5 warnings of a total of 20216 of this type.

Warning (3302 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.030
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.029
73	8	1	Car	Other	All	2034	5.299	1.350	3.925	0.048	0.072
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3302 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.058	4.585	0.089
10	6	2	Car	Other	All	2034	0.265	0.058	4.585	1.305
10	6	2	Car	Business	All	2034	0.265	0.058	4.585	0.860
10	6	2	LGV	Business	All	2034	0.265	0.058	4.585	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.058	4.585	0.389

Displayed 5 warnings of a total of 61 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.024

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base    120.60 0.00 0.00
av_ind_tax  19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base    100.00 0.00 0.00
av_ind_tax  19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Orange Route Option - 30 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Orange Route Option - 30 year

```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Orange Route Option - 30 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Orange Route Option - 30 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

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2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

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2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Orange Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

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2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Orange Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Orange Route Option - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

Orange Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Orange Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	704650	704650
Road	2020	0	5226	5226
Road	2021	0	5025	5025
Road	2022	0	4998	4998
Road	2023	0	4806	4806
Road	2024	0	4621	4621
Road	2025	0	4592	4592
Road	2026	0	4415	4415
Road	2027	0	4245	4245
Road	2028	0	4082	4082
Road	2029	0	4052	4052
Road	2030	0	3896	3896
Road	2031	0	3746	3746
Road	2032	0	3714	3714
Road	2033	0	3571	3571
Road	2034	0	3434	3434
Road	2035	0	3402	3402
Road	2036	0	3271	3271
Road	2037	0	3145	3145
Road	2038	0	3113	3113
Road	2039	0	2994	2994
Road	2040	0	2879	2879
Road	2041	0	2847	2847
Road	2042	0	2737	2737
Road	2043	0	2705	2705
Road	2044	0	2601	2601
Road	2045	0	2501	2501
Road	2046	0	2470	2470
Road	2047	0	2375	2375
Road	2048	0	2284	2284
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Orange Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	808398	808398
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112887
Car	2019	All	113832	112887
Car	2034	AM Hour 8-9	127298	126320
Car	2034	All	127298	126320
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	128213
All	2019	All	129159	128213
All	2034	AM Hour 8-9	144161	143183
All	2034	All	144161	143183

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	Dmtot_time	Dmtot_charge	Dmtot_fuel	Dmtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	975174	0	4516	212156
Road	2034	820412	0	3541	128265	792683	0	3287	131316

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3455	1146
Car	2034	4630	1659	4285	1535
LGV	2019	85	480	81	456
LGV	2034	97	549	91	514
OGV1	2019	53	302	52	293
OGV1	2034	59	332	56	319
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3587	1896
All	2034	4785	2539	4432	2368
Car	Total	137617	48941	127637	45389
LGV	Total	2904	16455	2732	15481
OGV1	Total	1773	10047	1707	9676
OGV2	Total	0	0	0	0
All	Total	142294	75442	132076	70546

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2990	-211	86	81	-6	24	22	-2	24	22	-2
Car	2034	4095	3790	-305	127	118	-9	17	16	-1	17	16	-1
LGV	2019	397	378	-20	11	10	-1	3	3	0	3	3	0
LGV	2034	454	426	-28	14	13	-1	2	2	0	2	2	0
OGV1	2019	250	243	-7	7	7	0	2	2	0	2	2	0
OGV1	2034	275	264	-11	9	8	-1	1	1	0	1	1	0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3611	-238	104	97	-7	29	27	-2	29	27	-2
All	2020	3953	3706	-248	108	101	-7	29	27	-2	29	27	-2
All	2021	4061	3803	-257	112	105	-7	28	26	-2	28	26	-2
All	2022	4171	3903	-267	116	108	-7	28	26	-2	28	26	-2

Orange Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3611	-238	104	97	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4480	-344	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	133479	-9923	4499	4187	-312	622	580	-42	622	580	-42

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	45066	0	375	-3634	0	-58
Road	2020	45396	0	378	-3596	0	-59
Road	2021	45511	0	381	-3555	0	-60
Road	2022	45598	0	384	-3512	0	-61
Road	2023	45659	0	387	-3468	0	-62
Road	2024	45696	0	389	-3421	0	-62
Road	2025	45709	0	384	-3373	0	-60
Road	2026	45699	0	379	-3324	0	-59
Road	2027	45668	0	375	-3274	0	-57
Road	2028	45617	0	370	-3222	0	-55
Road	2029	45545	0	364	-3170	0	-53
Road	2030	45455	0	359	-3116	0	-52
Road	2031	45347	0	352	-3063	0	-50
Road	2032	45221	0	345	-3008	0	-49
Road	2033	45080	0	338	-2954	0	-47
Road	2034	44922	0	331	-2899	0	-46
Road	2035	43933	0	318	-2787	0	-44
Road	2036	42965	0	306	-2680	0	-42
Road	2037	42018	0	294	-2577	0	-41
Road	2038	41093	0	283	-2478	0	-39
Road	2039	40188	0	272	-2383	0	-38
Road	2040	39303	0	262	-2291	0	-36
Road	2041	38438	0	252	-2203	0	-35
Road	2042	37592	0	242	-2118	0	-33
Road	2043	36764	0	233	-2037	0	-32
Road	2044	35955	0	224	-1958	0	-31
Road	2045	35164	0	215	-1883	0	-30
Road	2046	34391	0	207	-1811	0	-29
Road	2047	33634	0	199	-1741	0	-27
Road	2048	32894	0	191	-1674	0	-26
Road	2049	32171	0	184	-1610	0	-25
Road	Total	1293693	0	9575	-84820	0	-1398

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	39336	0	345	-3772	0	-44
Car	2034	38744	0	306	-2990	0	-34
LGV	2019	4174	0	22	-79	0	-11
LGV	2034	4492	0	18	-84	0	-9
OGV1	2019	783	0	8	70	0	-4
OGV1	2034	848	0	7	56	0	-3
OGV2	2019	773	0	0	147	0	0
OGV2	2034	839	0	0	120	0	0
All	2019	45066	0	375	-3634	0	-58

Orange Route Option - 30 year

All	2034	44922	0	331	-2899	0	-46
Car	Total	1118194	0	8843	-87652	0	-1054
LGV	Total	127512	0	531	-2282	0	-251
OGV1	Total	24124	0	200	1632	0	-94
OGV2	Total	23862	0	0	3483	0	0
All	Total	1293693	0	9575	-84820	0	-1398

PERSON TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
All	2019	45066	0	375	-3634	0	-58
All	2034	44922	0	331	-2899	0	-46
All	Total	1293693	0	9575	-84820	0	-1398

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
Business	2019	11515	0	40	-183	0	-17
Business	2034	12189	0	35	-107	0	-14
Commuting	2019	24324	0	255	-1412	0	-76
Commuting	2034	22319	0	213	-1056	0	-61
Other	2019	9226	0	80	-2038	0	35
Other	2034	10415	0	83	-1736	0	29
Business	Total	348807	0	1018	-3450	0	-422
Commuting	Total	654721	0	6264	-31495	0	-1818
Other	Total	290165	0	2292	-49875	0	842

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
AM Hour 8-9	2019	45066	0	375	-3634	0	-58
AM Hour 8-9	2034	44922	0	331	-2899	0	-46
AM Hour 8-9	Total	1293693	0	9575	-84820	0	-1398

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-11	-5	-10	41	103	151
Car	Business	2034	-10	-7	-8	46	118	231
Car	Business	Total	-313	-194	-264	1382	3529	6520
Car	Commuting	2019	-31	-21	-41	225	663	1429
Car	Commuting	2034	-27	-22	-36	266	726	1961
Car	Commuting	Total	-877	-665	-1158	7917	21993	56547
Car	Other	2019	-74	-33	-85	325	436	366
Car	Other	2034	-71	-38	-66	437	652	585
Car	Other	Total	-2230	-1133	-2189	12655	18487	16389
LGV	Business	2019	-10	-4	-5	28	42	46
LGV	Business	2034	-9	-5	-5	36	53	73
LGV	Business	Total	-278	-146	-154	1048	1545	2046
LGV	Commuting	2019	-11	-4	-6	32	48	53
LGV	Commuting	2034	-10	-6	-5	41	60	83
LGV	Commuting	Total	-316	-167	-175	1193	1759	2328
LGV	Other	2019	-4	-1	-2	11	16	18
LGV	Other	2034	-3	-2	-2	14	21	29
LGV	Other	Total	-109	-57	-60	411	606	802
OGV1	Business	2019	-2	-2	-1	6	12	16
OGV1	Business	2034	-2	-2	-1	7	15	24
OGV1	Business	Total	-62	-51	-41	221	446	668
OGV1	Commuting	2019	-1	-0	-0	2	3	4
OGV1	Commuting	2034	-0	-0	-0	2	4	6
OGV1	Commuting	Total	-16	-13	-11	57	114	171
OGV1	Other	2019	1	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	2	3
OGV1	Other	Total	-7	-6	-5	25	51	76
OGV2	Business	2019	-2	-1	-2	6	11	16
OGV2	Business	2034	-2	-2	-1	7	15	24
OGV2	Business	Total	-64	-51	-44	224	432	673
OGV2	Commuting	2019	-0	-0	-0	1	2	3
OGV2	Commuting	2034	-0	-0	-0	1	3	4
OGV2	Commuting	Total	-11	-9	-8	39	75	117
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-6	-5	-4	22	43	68

Orange Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-305	-147	-276	1115	2804	4111
Car	Business	2034	-199	-134	-163	939	2409	4730
Car	Business	Total	-6563	-3997	-5561	28553	72817	132730
Car	Commuting	2019	-319	-216	-428	2342	6907	14884
Car	Commuting	2034	-202	-160	-266	1959	5344	14447
Car	Commuting	Total	-6648	-4990	-8789	58968	164582	417581
Car	Other	2019	-697	-312	-801	3080	4132	3463
Car	Other	2034	-478	-253	-440	2926	4365	3919
Car	Other	Total	-15288	-7683	-15236	85055	123536	109128
LGV	Business	2019	-267	-104	-150	767	1145	1265
LGV	Business	2034	-177	-103	-98	733	1076	1491
LGV	Business	Total	-5811	-2997	-3225	21523	31749	41604
LGV	Commuting	2019	-116	-45	-65	334	498	550
LGV	Commuting	2034	-73	-42	-40	300	441	610
LGV	Commuting	Total	-2399	-1232	-1331	8850	13056	17072
LGV	Other	2019	-36	-14	-20	104	156	172
LGV	Other	2034	-23	-13	-13	94	138	191
LGV	Other	Total	-751	-386	-417	2772	4089	5347
OGV1	Business	2019	-60	-41	-41	167	328	430
OGV1	Business	2034	-39	-34	-26	153	311	483
OGV1	Business	Total	-1289	-1047	-869	4545	9164	13620
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-64	-37	-41	176	302	437
OGV2	Business	2034	-41	-36	-28	153	305	485
OGV2	Business	Total	-1352	-1053	-913	4613	8842	13725
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-313	-147	-280	1121	2585	4040
Car	Business	2034	-204	-135	-166	946	2299	4665
Car	Business	Total	-6705	-4011	-5647	28737	69069	130911
Car	Commuting	2019	-324	-200	44	3543	6794	12144
Car	Commuting	2034	-205	-155	85	2927	5284	12335
Car	Commuting	Total	-6747	-4777	1680	87204	162614	355225
Car	Other	2019	-710	-314	-475	3231	2781	2388
Car	Other	2034	-482	-260	-231	3148	3224	2983
Car	Other	Total	-15466	-7836	-8680	90696	90700	82420
LGV	Business	2019	-280	-107	-155	778	1110	1242
LGV	Business	2034	-184	-106	-101	743	1034	1459
LGV	Business	Total	-6043	-3080	-3335	21799	30629	40799
LGV	Commuting	2019	-117	-45	-66	337	502	554
LGV	Commuting	2034	-73	-43	-40	303	444	614
LGV	Commuting	Total	-2418	-1241	-1341	8928	13149	17181
LGV	Other	2019	-37	-14	-21	106	157	174
LGV	Other	2034	-23	-13	-13	95	139	192
LGV	Other	Total	-758	-389	-420	2797	4120	5383
OGV1	Business	2019	-69	-47	-46	187	363	471
OGV1	Business	2034	-44	-38	-30	167	335	519
OGV1	Business	Total	-1448	-1161	-981	4963	9889	14645
OGV1	Commuting	2019	-0	-0	-0	0	1	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-2	-1	-1	8	14	18
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-1	-1	-1	3	6	8
OGV2	Business	2019	-82	-50	-51	219	368	516
OGV2	Business	2034	-49	-44	-34	180	353	552
OGV2	Business	Total	-1654	-1307	-1091	5459	10281	15656
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Orange Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	1	10	45	31	16	63	65	37
Car	Business	2034	1	20	62	42	21	86	89	49
Car	Business	Total	21	542	1794	1201	625	2481	2570	1426
Car	Commuting	2019	4	322	537	289	133	512	232	197
Car	Commuting	2034	4	399	660	375	165	687	323	255
Car	Commuting	Total	126	11748	19477	10935	4853	19902	9281	7436
Car	Other	2019	4	80	204	112	56	192	228	60
Car	Other	2034	8	194	300	168	87	324	341	77
Car	Other	Total	223	5115	8525	4771	2448	8989	9668	2241
LGV	Business	2019	1	10	20	10	5	18	22	10
LGV	Business	2034	1	20	31	14	7	26	31	14
LGV	Business	Total	28	539	866	393	204	741	885	406
LGV	Commuting	2019	1	12	23	11	6	21	25	12
LGV	Commuting	2034	1	23	35	16	8	29	35	16
LGV	Commuting	Total	32	613	986	447	232	843	1007	462
LGV	Other	2019	0	4	8	4	2	7	9	4
LGV	Other	2034	0	8	12	5	3	10	12	6
LGV	Other	Total	11	211	340	154	80	291	347	159
OGV1	Business	2019	-0	2	6	2	1	4	3	12
OGV1	Business	2034	-0	3	9	3	1	5	4	16
OGV1	Business	Total	-1	93	252	86	39	141	110	462
OGV1	Commuting	2019	-0	0	2	1	0	1	1	3
OGV1	Commuting	2034	-0	1	2	1	0	1	1	4
OGV1	Commuting	Total	-0	24	64	22	10	36	28	118
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	-0	0	1	0	0	1	0	2
OGV1	Other	Total	-0	11	29	10	4	16	13	53
OGV2	Business	2019	-0	2	5	2	1	4	3	12
OGV2	Business	2034	-0	4	9	3	1	5	4	16
OGV2	Business	Total	-1	97	247	79	38	140	115	455
OGV2	Commuting	2019	-0	0	1	0	0	1	0	2
OGV2	Commuting	2034	-0	1	2	0	0	1	1	3
OGV2	Commuting	Total	-0	17	43	14	7	24	20	79
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	-0	0	1	0	0	0	0	2
OGV2	Other	Total	-0	10	25	8	4	14	12	46

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	259	1228	836	445	1717	1782	1022
Car	Business	2034	15	415	1276	850	440	1760	1822	1003
Car	Business	Total	419	10900	36680	24574	12808	50764	52588	29246
Car	Commuting	2019	38	3350	5588	3014	1383	5329	2417	2051
Car	Commuting	2034	31	2938	4863	2760	1214	5063	2377	1877
Car	Commuting	Total	941	87258	144729	81014	36041	147145	68484	55093
Car	Other	2019	42	762	1930	1060	531	1819	2154	565
Car	Other	2034	55	1302	2007	1128	582	2169	2284	514
Car	Other	Total	1474	33436	57017	31868	16325	59699	64592	15101
LGV	Business	2019	18	280	556	270	143	503	604	282
LGV	Business	2034	20	406	626	279	144	528	630	288
LGV	Business	Total	578	10864	17649	8042	4173	15142	18085	8310
LGV	Commuting	2019	8	122	242	117	62	219	262	123
LGV	Commuting	2034	8	166	256	114	59	216	258	118
LGV	Commuting	Total	237	4450	7245	3304	1715	6220	7430	3414
LGV	Other	2019	3	38	76	37	20	68	82	38
LGV	Other	2034	3	52	80	36	18	68	81	37
LGV	Other	Total	74	1394	2269	1035	537	1948	2327	1069
OGV1	Business	2019	-0	49	163	56	27	99	73	316
OGV1	Business	2034	-1	70	182	62	28	100	79	328
OGV1	Business	Total	-16	1881	5131	1759	800	2889	2239	9439
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	53	149	54	26	99	78	315

Orange Route Option - 30 year

Subtotal	346374	293123	53252	0	0
Private Sector Provider Impacts					
Revenue	0		0		0
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	0		0		0
Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	346374				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1218447				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	109183	109183	0
Investment costs	699215	699215	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	808398	808398	0
Central Government Funding: Non-Transport			
Indirect Tax Revenues	1398	1398	0
TOTALS			
Broad Transport Budget	808398	808398	0
Wider Public Finances	1398	1398	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	42
Economic Efficiency: Consumer Users (Commuting)	629490
Economic Efficiency: Consumer Users (Other)	242583
Economic Efficiency: Business Users and Providers	346374
Wider Public Finances (Indirect Taxation Revenues)	-1398
Present Value of Benefits (PVB)	1217092
Broad Transport Budget	808398
Present Value of Costs (PVC)	808398
OVERALL IMPACTS	
Net Present Value (NPV)	408694
Benefit to Cost Ratio (BCR)	1.506

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Orange_V2 30.txt

Orange Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\ORANGE_30.OUT

Elapsed time :

Orange Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:12:52

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 132097 Warnings found

Warning (30 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
127	126	2	Car	Business	All	2034	0.046	0.150	0.306	0.000	0.000
127	126	2	Car	Other	All	2034	0.046	0.150	0.306	0.002	0.001
127	126	2	LGV	Business	All	2034	0.046	0.150	0.306	0.001	0.001
127	126	2	Car	Commuting	All	2034	0.046	0.150	0.306	0.001	0.000
127	126	2	LGV	Commuting	All	2034	0.046	0.150	0.306	0.001	0.001

Displayed 5 warnings of a total of 5380 of this type.

Warning (148 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Other	All	2034	0.232	0.047	4.956	0.005	0.005
79	8	1	OGV2	Commuting	All	2034	0.232	0.047	4.956	0.005	0.005
79	8	1	OGV2	Business	All	2034	0.232	0.047	4.956	0.005	0.005

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79	8	1	OGV1	Business	All	2034	0.231	0.047	4.939	0.005	0.005
79	8	1	OGV1	Other	All	2034	0.231	0.047	4.939	0.005	0.005

Displayed 5 warnings of a total of 102685 of this type.

Warning (515 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
126	61	2	OGV2	Business	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	OGV2	Commuting	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	OGV2	Other	All	2034	0.938	5.255	0.178	0.116	0.116
126	61	2	LGV	Business	All	2019	0.938	5.249	0.179	0.057	0.057
126	61	2	LGV	Other	All	2019	0.938	5.249	0.179	0.057	0.057

Displayed 5 warnings of a total of 20216 of this type.

Warning (3302 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.030
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.029
73	8	1	Car	Other	All	2034	5.299	1.350	3.925	0.048	0.072
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3302 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.058	4.585	0.089
10	6	2	Car	Other	All	2034	0.265	0.058	4.585	1.305
10	6	2	Car	Business	All	2034	0.265	0.058	4.585	0.860
10	6	2	LGV	Business	All	2034	0.265	0.058	4.585	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.058	4.585	0.389

Displayed 5 warnings of a total of 61 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.024

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

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VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.	Start_yr	End_yr	Rate
	1	30	4.00
	31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.	Start_yr	End_yr	Rate
	1	30	3.50
	31	75	3.00
	76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour	*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
	1	1	2781.0	1308.0	1189.0	
	1	2	2781.0	1308.0	1189.0	
	2	1	2781.0	1308.0	1189.0	
	2	2	2781.0	1308.0	1189.0	
	3	1	2781.0	0.0	0.0	
	3	2	2781.0	0.0	0.0	
	4	1	2781.0	0.0	0.0	
	4	2	2781.0	0.0	0.0	
	5	1	2781.0	0.0	0.0	
	5	2	2781.0	1308.0	1189.0	
	6	1	2781.0	0.0	0.0	
	6	2	2781.0	1308.0	1189.0	
	7	1	2781.0	0.0	0.0	
	7	2	2781.0	1308.0	1189.0	

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```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

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2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)
 *% change p.a.
 *Start_yr End_yr Growth
 2003 2080 0.00

AV_IND_TAX_CHANGES - (std)
 *% change p.a.
 *Start_yr End_yr Growth
 2011 2050 0.00

CHARGE_TAX_RATES - (used)
 *%
 *charge final intermediate
 1 0.0 0.0
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0

CHARGE_TAX_RATES - (std)
 *%
 *charge final intermediate
 1 0.0 0.0
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Orange Route Option - 60 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Orange Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Orange Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Orange Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Orange Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Orange Route Option - 60 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode purpose   Period1 Period2 Period3 Period4 Period5
1             1         12.0    10.3
1             2         42.9    42.2
1             3         45.1    47.5
2             1         40.2    50.3
2             2         45.1    35.1
2             3         14.7    14.6
3             1         75.6    81.3
3             2         17.0    11.1
3             3         7.4     7.6
4             1         79.7    86.9
4             2         13.2    7.8
4             3         7.1     5.3
5             1         10.2    10.2
5             2         18.9    18.9
5             3         70.8    70.8
6             1         10.2    10.2
6             2         18.9    18.9
6             3         70.8    70.8
7             1         10.2    10.2
7             2         18.9    18.9
7             3         70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode purpose   Period1 Period2 Period3 Period4 Period5
1             1         18.1    13.0    19.9    12.3    3.2
    
```


Orange Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Orange Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	704650	704650
Road	2020	0	5226	5226
Road	2021	0	5025	5025
Road	2022	0	4998	4998
Road	2023	0	4806	4806
Road	2024	0	4621	4621
Road	2025	0	4592	4592
Road	2026	0	4415	4415
Road	2027	0	4245	4245
Road	2028	0	4082	4082
Road	2029	0	4052	4052
Road	2030	0	3896	3896
Road	2031	0	3746	3746
Road	2032	0	3714	3714
Road	2033	0	3571	3571
Road	2034	0	3434	3434
Road	2035	0	3402	3402
Road	2036	0	3271	3271
Road	2037	0	3145	3145
Road	2038	0	3113	3113
Road	2039	0	2994	2994
Road	2040	0	2879	2879
Road	2041	0	2847	2847
Road	2042	0	2737	2737
Road	2043	0	2705	2705
Road	2044	0	2601	2601
Road	2045	0	2501	2501
Road	2046	0	2470	2470
Road	2047	0	2375	2375
Road	2048	0	2284	2284
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Orange Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	808398	808398
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112887
Car	2019	All	113832	112887
Car	2034	AM Hour 8-9	127298	126320
Car	2034	All	127298	126320
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	128213
All	2019	All	129159	128213
All	2034	AM Hour 8-9	144161	143183
All	2034	All	144161	143183

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	975174	0	4516	212156
Road	2034	820412	0	3541	128265	792683	0	3287	131316

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3455	1146
Car	2034	4630	1659	4285	1535
LGV	2019	85	480	81	456
LGV	2034	97	549	91	514
OGV1	2019	53	302	52	293
OGV1	2034	59	332	56	319
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3587	1896
All	2034	4785	2539	4432	2368
Car	Total	276503	98698	256184	91443
LGV	Total	5808	32910	5455	30912
OGV1	Total	3529	20000	3395	19238
OGV2	Total	0	0	0	0
All	Total	285839	151607	265034	141593

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2990	-211	86	81	-6	24	22	-2	24	22	-2
Car	2034	4095	3790	-305	127	118	-9	17	16	-1	17	16	-1
LGV	2019	397	378	-20	11	10	-1	3	3	0	3	3	0
LGV	2034	454	426	-28	14	13	-1	2	2	0	2	2	0
OGV1	2019	250	243	-7	7	7	0	2	2	0	2	2	0
OGV1	2034	275	264	-11	9	8	-1	1	1	0	1	1	0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3611	-238	104	97	-6	29	27	-2	29	27	-2
All	2020	3953	3706	-248	108	101	-7	29	27	-2	29	27	-2
All	2021	4061	3803	-257	112	105	-7	28	26	-2	28	26	-2
All	2022	4171	3903	-267	116	108	-7	28	26	-2	28	26	-2

Orange Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3611	-238	104	97	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4480	-344	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	267871	-20239	10560	9816	-744	815	759	-56	815	759	-56

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Orange Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_pri	Fuel	Non_fuel	PT_fares_pri
						Taxes
Road	2019	45066	0	375	-3634	0
Road	2020	45396	0	378	-3596	0
Road	2021	45511	0	381	-3555	0
Road	2022	45598	0	384	-3512	0
Road	2023	45659	0	387	-3468	0
Road	2024	45696	0	389	-3421	0
Road	2025	45709	0	384	-3373	0
Road	2026	45699	0	379	-3324	0
Road	2027	45668	0	375	-3274	0
Road	2028	45617	0	370	-3222	0
Road	2029	45545	0	364	-3170	0
Road	2030	45455	0	359	-3116	0
Road	2031	45347	0	352	-3063	0
Road	2032	45221	0	345	-3008	0
Road	2033	45080	0	338	-2954	0
Road	2034	44922	0	331	-2899	0
Road	2035	43933	0	318	-2787	0
Road	2036	42965	0	306	-2680	0
Road	2037	42018	0	294	-2577	0
Road	2038	41093	0	283	-2478	0
Road	2039	40188	0	272	-2383	0
Road	2040	39303	0	262	-2291	0
Road	2041	38438	0	252	-2203	0
Road	2042	37592	0	242	-2118	0
Road	2043	36764	0	233	-2037	0
Road	2044	35955	0	224	-1958	0
Road	2045	35164	0	215	-1883	0
Road	2046	34391	0	207	-1811	0
Road	2047	33634	0	199	-1741	0
Road	2048	32894	0	191	-1674	0
Road	2049	32171	0	184	-1610	0
Road	2050	31464	0	177	-1548	0
Road	2051	30772	0	170	-1488	0
Road	2052	30095	0	163	-1431	0
Road	2053	29434	0	157	-1376	0
Road	2054	28787	0	151	-1323	0
Road	2055	28155	0	145	-1272	0
Road	2056	27536	0	140	-1223	0
Road	2057	26931	0	134	-1176	0
Road	2058	26340	0	129	-1131	0
Road	2059	25761	0	124	-1087	0
Road	2060	25196	0	119	-1046	0
Road	2061	24643	0	115	-1005	0
Road	2062	24102	0	110	-967	0
Road	2063	23573	0	106	-930	0
Road	2064	23055	0	102	-894	0
Road	2065	22550	0	98	-859	0
Road	2066	22055	0	94	-826	0
Road	2067	21571	0	91	-795	0
Road	2068	21098	0	87	-764	0
Road	2069	20635	0	84	-735	0
Road	2070	20183	0	81	-706	0
Road	2071	19740	0	78	-679	0
Road	2072	19308	0	75	-653	0
Road	2073	18885	0	72	-628	0
Road	2074	18471	0	69	-604	0
Road	2075	18066	0	66	-581	0
Road	2076	17670	0	64	-558	0
Road	2077	17283	0	61	-537	0
Road	2078	16905	0	59	-516	0
Road	2079	17196	0	59	-516	0
Road	Total	1991152	0	12757	-112674	0

-1837

Orange Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Car	2019	39336	0	345	-3772	0
Car	2034	38744	0	306	-2990	0
LGV	2019	4174	0	22	-79	0
LGV	2034	4492	0	18	-84	0
OGV1	2019	783	0	8	70	0
OGV1	2034	848	0	7	56	0
OGV2	2019	773	0	0	147	0
OGV2	2034	839	0	0	120	0
All	2019	45066	0	375	-3634	0
All	2034	44922	0	331	-2899	0
Car	Total	1714424	0	11781	-116384	0
LGV	Total	200334	0	708	-3090	0
OGV1	Total	38400	0	267	2168	0
OGV2	Total	37993	0	0	4632	0
All	Total	1991152	0	12757	-112674	0

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	45066	0	375	-3634	0
All	2034	44922	0	331	-2899	0
All	Total	1991152	0	12757	-112674	0

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	11515	0	40	-183	0
Business	2034	12189	0	35	-107	0
Commuting	2019	24324	0	255	-1412	0
Commuting	2034	22319	0	213	-1056	0
Other	2019	9226	0	80	-2038	0
Other	2034	10415	0	83	-1736	0
Business	Total	554116	0	1359	-4475	0
Commuting	Total	990286	0	8313	-41642	0
Other	Total	446749	0	3085	-66558	0

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	45066	0	375	-3634	0
AM Hour 8-9	2034	44922	0	331	-2899	0
AM Hour 8-9	Total	1991152	0	12757	-112674	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-11	-5	-10	41	103	151
Car	Business	2034	-10	-7	-8	46	118	231
Car	Business	Total	-606	-391	-503	2758	7058	13451
Car	Commuting	2019	-31	-21	-41	225	663	1429
Car	Commuting	2034	-27	-22	-36	266	726	1961
Car	Commuting	Total	-1701	-1316	-2240	15898	43758	115389
Car	Other	2019	-74	-33	-85	325	436	366
Car	Other	2034	-71	-38	-66	437	652	585
Car	Other	Total	-4370	-2266	-4162	25768	38047	33949
LGV	Business	2019	-10	-4	-5	28	42	46
LGV	Business	2034	-9	-5	-5	36	53	73
LGV	Business	Total	-538	-298	-298	2122	3122	4230
LGV	Commuting	2019	-11	-4	-6	32	48	53
LGV	Commuting	2034	-10	-6	-5	41	60	83
LGV	Commuting	Total	-612	-339	-339	2415	3554	4814
LGV	Other	2019	-4	-1	-2	11	16	18
LGV	Other	2034	-3	-2	-2	14	21	29
LGV	Other	Total	-211	-117	-117	832	1225	1659
OGV1	Business	2019	-2	-2	-1	6	12	16
OGV1	Business	2034	-2	-2	-1	7	15	24
OGV1	Business	Total	-119	-101	-80	445	903	1376
OGV1	Commuting	2019	-1	-0	-0	2	3	4

Orange Route Option - 60 year

OGV1	Commuting	2034	-0	-0	-0	2	4	6
OGV1	Commuting	Total	-30	-26	-20	114	231	352
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	2	3
OGV1	Other	Total	-14	-12	-9	51	103	157
OGV2	Business	2019	-2	-1	-2	6	11	16
OGV2	Business	2034	-2	-2	-1	7	15	24
OGV2	Business	Total	-124	-104	-85	448	879	1384
OGV2	Commuting	2019	-0	-0	-0	1	2	3
OGV2	Commuting	2034	-0	-0	-0	1	3	4
OGV2	Commuting	Total	-22	-18	-15	78	153	240
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-12	-10	-9	45	88	139

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-305	-147	-276	1115	2804	4111
Car	Business	2034	-199	-134	-163	939	2409	4730
Car	Business	Total	-9922	-6262	-8306	44372	113391	212403
Car	Commuting	2019	-319	-216	-428	2342	6907	14884
Car	Commuting	2034	-202	-160	-266	1959	5344	14447
Car	Commuting	Total	-9690	-7392	-12782	88427	244928	634794
Car	Other	2019	-697	-312	-801	3080	4132	3463
Car	Other	2034	-478	-253	-440	2926	4365	3919
Car	Other	Total	-22470	-11486	-21855	129054	189169	168052
LGV	Business	2019	-267	-104	-150	767	1145	1265
LGV	Business	2034	-177	-103	-98	733	1076	1491
LGV	Business	Total	-8801	-4736	-4875	33868	49879	66712
LGV	Commuting	2019	-116	-45	-65	334	498	550
LGV	Commuting	2034	-73	-42	-40	300	441	610
LGV	Commuting	Total	-3491	-1867	-1935	13361	19683	26249
LGV	Other	2019	-36	-14	-20	104	156	172
LGV	Other	2034	-23	-13	-13	94	138	191
LGV	Other	Total	-1094	-585	-606	4185	6165	8222
OGV1	Business	2019	-60	-41	-41	167	328	430
OGV1	Business	2034	-39	-34	-26	153	311	483
OGV1	Business	Total	-1949	-1625	-1311	7123	14411	21752
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-64	-37	-41	176	302	437
OGV2	Business	2034	-41	-36	-28	153	305	485
OGV2	Business	Total	-2036	-1658	-1388	7191	13987	21898
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-313	-147	-280	1121	2585	4040
Car	Business	2034	-204	-135	-166	946	2299	4665
Car	Business	Total	-10105	-6285	-8418	44623	108590	209963
Car	Commuting	2019	-324	-200	44	3543	6794	12144
Car	Commuting	2034	-205	-155	85	2927	5284	12335
Car	Commuting	Total	-9818	-7130	1054	125957	242384	552142
Car	Other	2019	-710	-314	-475	3231	2781	2388
Car	Other	2034	-482	-260	-231	3148	3224	2983
Car	Other	Total	-22690	-11704	-13285	136822	145370	132352
LGV	Business	2019	-280	-107	-155	778	1110	1242
LGV	Business	2034	-184	-106	-101	743	1034	1459
LGV	Business	Total	-9099	-4845	-5018	34237	48355	65608
LGV	Commuting	2019	-117	-45	-66	337	502	554
LGV	Commuting	2034	-73	-43	-40	303	444	614
LGV	Commuting	Total	-3516	-1879	-1947	13465	19804	26394
LGV	Other	2019	-37	-14	-21	106	157	174
LGV	Other	2034	-23	-13	-13	95	139	192
LGV	Other	Total	-1102	-589	-610	4219	6205	8269

Orange Route Option - 60 year

OGV1	Business	2019	-69	-47	-46	187	363	471
OGV1	Business	2034	-44	-38	-30	167	335	519
OGV1	Business	Total	-2153	-1775	-1457	7673	15361	23120
OGV1	Commuting	2019	-0	-0	-0	0	1	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-2	-2	-2	10	18	24
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-1	-1	-1	4	8	10
OGV2	Business	2019	-82	-50	-51	219	368	516
OGV2	Business	2034	-49	-44	-34	180	353	552
OGV2	Business	Total	-2421	-1991	-1618	8296	15885	24473
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	1	10	45	31	16	63	65	37
Car	Business	2034	1	20	62	42	21	86	89	49
Car	Business	Total	42	1151	3663	2446	1270	5060	5240	2896
Car	Commuting	2019	4	322	537	289	133	512	232	197
Car	Commuting	2034	4	399	660	375	165	687	323	255
Car	Commuting	Total	253	23715	39283	22178	9796	40521	18964	15079
Car	Other	2019	4	80	204	112	56	192	228	60
Car	Other	2034	8	194	300	168	87	324	341	77
Car	Other	Total	467	10946	17518	9825	5054	18709	19904	4542
LGV	Business	2019	1	10	20	10	5	18	22	10
LGV	Business	2034	1	20	31	14	7	26	31	14
LGV	Business	Total	58	1134	1783	803	415	1515	1807	828
LGV	Commuting	2019	1	12	23	11	6	21	25	12
LGV	Commuting	2034	1	23	35	16	8	29	35	16
LGV	Commuting	Total	66	1290	2029	913	472	1724	2057	942
LGV	Other	2019	0	4	8	4	2	7	9	4
LGV	Other	2034	0	8	12	5	3	10	12	6
LGV	Other	Total	23	445	699	315	163	594	709	325
OGV1	Business	2019	-0	2	6	2	1	4	3	12
OGV1	Business	2034	-0	3	9	3	1	5	4	16
OGV1	Business	Total	-2	196	518	177	80	287	225	943
OGV1	Commuting	2019	-0	0	2	1	0	1	1	3
OGV1	Commuting	2034	-0	1	2	1	0	1	1	4
OGV1	Commuting	Total	-0	50	132	45	20	73	58	241
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	-0	0	1	0	0	1	0	2
OGV1	Other	Total	-0	22	59	20	9	33	26	107
OGV2	Business	2019	-0	2	5	2	1	4	3	12
OGV2	Business	2034	-0	4	9	3	1	5	4	16
OGV2	Business	Total	-2	203	512	162	77	284	236	927
OGV2	Commuting	2019	-0	0	1	0	0	1	0	2
OGV2	Commuting	2034	-0	1	2	0	0	1	1	3
OGV2	Commuting	Total	-0	35	89	28	13	49	41	161
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	-0	0	1	0	0	0	0	2
OGV2	Other	Total	-0	20	51	16	8	29	24	93

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	259	1228	836	445	1717	1782	1022
Car	Business	2034	15	415	1276	850	440	1760	1822	1003
Car	Business	Total	666	17892	58172	38895	20221	80410	83279	46140
Car	Commuting	2019	38	3350	5588	3014	1383	5329	2417	2051
Car	Commuting	2034	31	2938	4863	2760	1214	5063	2377	1877
Car	Commuting	Total	1408	131434	217841	122517	54288	223260	104229	83309
Car	Other	2019	42	762	1930	1060	531	1819	2154	565
Car	Other	2034	55	1302	2007	1128	582	2169	2284	514
Car	Other	Total	2294	53005	87191	48827	25072	92313	98938	22822
LGV	Business	2019	18	280	556	270	143	503	604	282
LGV	Business	2034	20	406	626	279	144	528	630	288
LGV	Business	Total	921	17705	28188	12748	6596	24038	28693	13157
LGV	Commuting	2019	8	122	242	117	62	219	262	123
LGV	Commuting	2034	8	166	256	114	59	216	258	118

Orange Route Option - 60 year

LGV	Commuting	Total	363	6950	11097	5024	2601	9472	11307	5186
LGV	Other	2019	3	38	76	37	20	68	82	38
LGV	Other	2034	3	52	80	36	18	68	81	37
LGV	Other	Total	114	2177	3476	1574	815	2967	3541	1624
OGV1	Business	2019	-0	49	163	56	27	99	73	316
OGV1	Business	2034	-1	70	182	62	28	100	79	328
OGV1	Business	Total	-26	3065	8189	2805	1268	4567	3563	14969
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	53	149	54	26	99	78	315
OGV2	Business	2034	-1	72	181	56	27	99	82	322
OGV2	Business	Total	-25	3178	8063	2565	1217	4522	3740	14732
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	255	1214	828	443	1653	1635	964
Car	Business	2034	15	414	1271	847	439	1720	1735	965
Car	Business	Total	671	17844	57914	38744	20179	78764	79641	44612
Car	Commuting	2019	42	3690	5763	2786	1422	4503	1756	2038
Car	Commuting	2034	34	3185	4983	2594	1237	4529	1859	1850
Car	Commuting	Total	1541	141262	222700	115929	55272	201474	83995	82416
Car	Other	2019	46	833	1726	866	457	782	1682	510
Car	Other	2034	58	1368	1866	983	529	1177	1930	473
Car	Other	Total	2436	55506	81548	43095	22967	55136	84964	21213
LGV	Business	2019	19	273	545	263	141	493	579	275
LGV	Business	2034	21	405	621	276	142	512	594	274
LGV	Business	Total	928	17611	27970	12589	6533	23479	27445	12683
LGV	Commuting	2019	8	124	245	119	63	220	264	123
LGV	Commuting	2034	8	168	259	115	59	218	259	118
LGV	Commuting	Total	366	7014	11193	5065	2620	9523	11342	5197
LGV	Other	2019	3	39	77	37	20	69	83	39
LGV	Other	2034	3	53	81	36	19	68	81	37
LGV	Other	Total	115	2198	3507	1587	821	2984	3553	1628
OGV1	Business	2019	-1	55	176	60	29	109	80	351
OGV1	Business	2034	-1	76	193	66	29	106	84	354
OGV1	Business	Total	-31	3292	8641	2949	1329	4837	3780	15972
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	-0	0	0	0	0	0	0	0
OGV1	Commuting	Total	-0	5	15	5	2	6	3	10
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	-0	0	0	0	0	0	0	0
OGV1	Other	Total	-0	2	7	2	1	3	1	4
OGV2	Business	2019	-1	65	176	61	29	116	91	382
OGV2	Business	2034	-1	85	204	63	30	112	92	373
OGV2	Business	Total	-36	3653	8949	2814	1332	5039	4137	16736
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	3.43%	4.45%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	990286	990286	0
Vehicle operating costs	-33329	-33329	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Orange Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	956958	956958	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	446749	446749	0
Vehicle operating costs	-63472	-63472	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	383277	383277	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	554116	477723	76393	0	0
Vehicle operating costs	-3116	-10117	7001	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	551000	467606	83394	0	0

Private Sector Provider Impacts			
Revenue	0	0	0
Operating costs	0	0	0
Investment costs	0	0	0
Grant/subsidy	0	0	0
Subtotal	0	0	0

Other business Impacts			
Developer contributions	0	0	0
NET BUSINESS IMPACT	551000		

TOTAL
Present Value of Transport Economic
Efficiency Benefits (TEE) 1891235

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	109183	109183	0
Investment costs	699215	699215	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	808398	808398	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	1837	1837	0

TOTALS			
Broad Transport Budget	808398	808398	0
Wider Public Finances	1837	1837	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	56
Economic Efficiency: Consumer Users (Commuting)	956958
Economic Efficiency: Consumer Users (Other)	383277
Economic Efficiency: Business Users and Providers	551000
Wider Public Finances (Indirect Taxation Revenues)	-1837
Present Value of Benefits (PVB)	1889454
Broad Transport Budget	808398
Present Value of Costs (PVC)	808398

OVERALL IMPACTS

Orange Route Option - 60 year

Net Present Value (NPV)	1081056
Benefit to Cost Ratio (BCR)	2.337

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Orange_V2_60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\ORANGE_60.OUT

Elapsed time :

Pink Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 10:15:32

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
125850 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
133	1	1	OGV1	Business	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV1	Commuting	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV1	Other	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV2	Business	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV2	Commuting	All	2034	0.110	0.299	0.368	0.001	0.001

Displayed 5 warnings of a total of 161 of this type.

Warning (375 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
105	9	1	OGV2	Other	All	2034	0.627	0.172	3.637	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.172	3.637	0.001	0.001
105	9	1	OGV2	Business	All	2034	0.627	0.172	3.637	0.001	0.001

Pink Route Option - 30 year

105	9	1	OGV1	Commuting	All	2034	0.621	0.172	3.604	0.001	0.001
105	9	1	OGV1	Other	All	2034	0.621	0.172	3.604	0.001	0.001

Displayed 5 warnings of a total of 102839 of this type.

Warning (12 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
133	1	1	OGV1	Commuting	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV2	Business	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV1	Other	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV2	Commuting	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV1	Business	All	2034	0.840	6.049	0.139	0.001	0.001

Displayed 5 warnings of a total of 18851 of this type.

Warning (3449 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.023
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.023
73	8	1	Car	Other	All	2034	5.299	1.364	3.885	0.048	0.046
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3449 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV1	Business	All	2019	0.794	0.208	3.815	0.003
79	8	1	OGV2	Commuting	All	2019	0.794	0.208	3.815	0.001
79	8	1	OGV2	Business	All	2019	0.794	0.208	3.815	0.003
79	8	1	OGV1	Commuting	All	2019	0.794	0.208	3.815	0.001
79	8	1	OGV1	Other	All	2019	0.794	0.208	3.815	0.000

Displayed 5 warnings of a total of 97 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base    120.60 0.00 0.00
av_ind_tax  19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base    100.00 0.00 0.00
av_ind_tax  19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```


Pink Route Option - 30 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Pink Route Option - 30 year

```

VALUE_OF_TIME - (std)
* Pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2025 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Pink Route Option - 30 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Pink Route Option - 30 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

Pink Route Option - 30 year

2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Pink Route Option - 30 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Pink Route Option - 30 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Pink Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Pink Route Option - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Pink Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Pink Route Option - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

Pink Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Pink Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	419056	419056
Road	2020	0	1366	1366
Road	2021	0	1313	1313
Road	2022	0	1306	1306
Road	2023	0	1256	1256
Road	2024	0	1208	1208
Road	2025	0	1200	1200
Road	2026	0	1154	1154
Road	2027	0	1110	1110
Road	2028	0	1067	1067
Road	2029	0	1059	1059
Road	2030	0	1018	1018
Road	2031	0	979	979
Road	2032	0	971	971
Road	2033	0	933	933
Road	2034	0	898	898
Road	2035	0	889	889
Road	2036	0	855	855
Road	2037	0	822	822
Road	2038	0	814	814
Road	2039	0	782	782
Road	2040	0	752	752
Road	2041	0	744	744
Road	2042	0	715	715
Road	2043	0	707	707
Road	2044	0	680	680
Road	2045	0	654	654
Road	2046	0	646	646
Road	2047	0	621	621
Road	2048	0	597	597
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Pink Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	446171	446171
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112221
Car	2019	All	113832	112221
Car	2034	AM Hour 8-9	127298	125570
Car	2034	All	127298	125570
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127548
All	2019	All	129159	127548
All	2034	AM Hour 8-9	144161	142432
All	2034	All	144161	142432

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	978298	0	4548	210682
Road	2034	820412	0	3541	128265	795265	0	3306	130181

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3484	1156
Car	2034	4630	1659	4313	1545
LGV	2019	85	480	81	457
LGV	2034	97	549	91	514
OGV1	2019	53	302	52	293
OGV1	2034	59	332	56	318
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3616	1906
All	2034	4785	2539	4460	2378
Car	Total	137617	48941	128534	45708
LGV	Total	2904	16455	2733	15488
OGV1	Total	1773	10047	1706	9667
OGV2	Total	0	0	0	0
All	Total	142294	75442	132973	70864

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3015	-186	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3815	-280	127	119	-9	17	16	-1	17	16	-1
LGV	2019	397	378	-19	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	426	-28	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	242	-8	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	264	-11	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3636	-213	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3731	-222	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3829	-231	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3930	-241	116	109	-7	28	26	-2	28	26	-2

Pink Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3636	-213	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4505	-319	150	140	-10	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	134270	-9133	4499	4212	-288	622	583	-39	622	583	-39

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	38575	0	325	-2212	0	-71
Road	2020	39048	0	330	-2192	0	-72
Road	2021	39325	0	334	-2171	0	-73
Road	2022	39572	0	338	-2148	0	-74
Road	2023	39789	0	342	-2123	0	-75
Road	2024	39977	0	346	-2098	0	-76
Road	2025	40137	0	343	-2071	0	-74
Road	2026	40271	0	340	-2043	0	-72
Road	2027	40380	0	337	-2014	0	-71
Road	2028	40464	0	334	-1984	0	-69
Road	2029	40525	0	330	-1954	0	-68
Road	2030	40564	0	327	-1923	0	-66
Road	2031	40582	0	321	-1891	0	-65
Road	2032	40579	0	316	-1860	0	-63
Road	2033	40557	0	310	-1827	0	-62
Road	2034	40516	0	305	-1795	0	-60
Road	2035	39624	0	293	-1726	0	-58
Road	2036	38751	0	282	-1659	0	-56
Road	2037	37898	0	271	-1596	0	-53
Road	2038	37064	0	261	-1534	0	-51
Road	2039	36249	0	251	-1475	0	-49
Road	2040	35451	0	241	-1419	0	-47
Road	2041	34671	0	232	-1364	0	-46
Road	2042	33909	0	223	-1312	0	-44
Road	2043	33163	0	214	-1261	0	-42
Road	2044	32433	0	206	-1213	0	-41
Road	2045	31720	0	198	-1166	0	-39
Road	2046	31023	0	190	-1121	0	-38
Road	2047	30341	0	183	-1078	0	-36
Road	2048	29674	0	176	-1037	0	-35
Road	2049	29022	0	169	-997	0	-33
Road	Total	1151855	0	8668	-52261	0	-1779

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	33172	0	296	-2453	0	-57
Car	2034	34700	0	279	-1992	0	-48
LGV	2019	3766	0	21	-15	0	-10
LGV	2034	4071	0	18	-7	0	-9
OGV1	2019	825	0	8	82	0	-4
OGV1	2034	876	0	7	66	0	-3
OGV2	2019	813	0	0	175	0	0
OGV2	2034	868	0	0	138	0	0
All	2019	38575	0	325	-2212	0	-71

Pink Route Option - 30 year

All	2034	40516	0	305	-1795	0	-60
Car	Total	986570	0	7937	-57994	0	-1435
LGV	Total	115441	0	525	-247	0	-248
OGV1	Total	25045	0	205	1922	0	-96
OGV2	Total	24799	0	0	4059	0	0
All	Total	1151855	0	8668	-52261	0	-1779

PERSON TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	38575	0	325	-2212	-71
All	2034	40516	0	305	-1795	-60
All	Total	1151855	0	8668	-52261	-1779

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	10291	0	38	181	-17
Business	2034	11159	0	34	162	-14
Commuting	2019	20417	0	216	-1170	-68
Commuting	2034	20670	0	199	-765	-65
Other	2019	7867	0	71	-1223	14
Other	2034	8687	0	72	-1192	19
Business	Total	317495	0	978	4599	-416
Commuting	Total	591103	0	5691	-23801	-1844
Other	Total	243257	0	1998	-33058	481

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	38575	0	325	-2212	-71
AM Hour 8-9	2034	40516	0	305	-1795	-60
AM Hour 8-9	Total	1151855	0	8668	-52261	-1779

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-0	-11	49	49	142
Car	Business	2034	0	-1	-7	59	81	199
Car	Business	Total	0	-19	-251	1745	2245	5717
Car	Commuting	2019	-0	-6	-39	269	548	1088
Car	Commuting	2034	0	-3	-32	277	734	1683
Car	Commuting	Total	-0	-114	-1050	8519	21269	47417
Car	Other	2019	0	-3	-105	301	214	389
Car	Other	2034	0	-12	-79	476	330	532
Car	Other	Total	0	-311	-2655	13360	9297	15354
LGV	Business	2019	0	-0	-6	30	27	38
LGV	Business	2034	0	-1	-5	41	38	57
LGV	Business	Total	0	-33	-162	1181	1078	1613
LGV	Commuting	2019	0	-0	-7	34	31	43
LGV	Commuting	2034	0	-2	-5	47	43	65
LGV	Commuting	Total	0	-37	-184	1345	1227	1835
LGV	Other	2019	0	-0	-2	12	11	15
LGV	Other	2034	0	-1	-2	16	15	22
LGV	Other	Total	0	-13	-63	463	423	632
OGV1	Business	2019	-0	-0	-1	6	8	17
OGV1	Business	2034	-0	-0	-2	8	12	25
OGV1	Business	Total	-1	-4	-45	227	344	704
OGV1	Commuting	2019	-0	-0	-0	2	2	4
OGV1	Commuting	2034	-0	-0	-0	2	3	6
OGV1	Commuting	Total	-0	-1	-12	58	88	180
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-0	-0	-5	26	39	80
OGV2	Business	2019	-0	-0	-1	6	8	17
OGV2	Business	2034	-0	-0	-2	8	12	25
OGV2	Business	Total	-0	-3	-47	225	337	703
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-0	-1	-8	39	59	122
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-0	-5	23	34	71

Pink Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-3	-303	1347	1338	3878
Car	Business	2034	0	-16	-144	1202	1649	4076
Car	Business	Total	0	-365	-5349	35947	45572	116845
Car	Commuting	2019	-0	-58	-401	2802	5705	11327
Car	Commuting	2034	0	-22	-237	2039	5408	12399
Car	Commuting	Total	-0	-894	-7994	63999	157276	347921
Car	Other	2019	0	-28	-990	2851	2021	3686
Car	Other	2034	0	-84	-529	3188	2209	3563
Car	Other	Total	0	-1998	-18513	89011	62017	103094
LGV	Business	2019	0	-7	-173	821	733	1023
LGV	Business	2034	0	-27	-99	837	768	1168
LGV	Business	Total	0	-643	-3409	24181	22035	32837
LGV	Commuting	2019	0	-3	-75	357	319	445
LGV	Commuting	2034	0	-11	-40	343	315	478
LGV	Commuting	Total	0	-262	-1410	9936	9052	13479
LGV	Other	2019	0	-1	-24	112	100	139
LGV	Other	2034	0	-3	-13	107	99	150
LGV	Other	Total	0	-82	-442	3112	2835	4222
OGV1	Business	2019	-2	-2	-34	174	230	459
OGV1	Business	2034	-0	-3	-32	157	247	507
OGV1	Business	Total	-16	-74	-934	4671	7034	14364
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-1	-1	-37	174	225	454
OGV2	Business	2034	-0	-3	-33	155	241	507
OGV2	Business	Total	-10	-68	-977	4640	6888	14326
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-3	-317	1337	1315	3887
Car	Business	2034	0	-16	-145	1202	1630	4083
Car	Business	Total	0	-366	-5467	35883	45024	117058
Car	Commuting	2019	-0	-46	214	4138	5494	8610
Car	Commuting	2034	0	-11	181	3056	5471	10313
Car	Commuting	Total	-0	-589	4863	94181	157207	286262
Car	Other	2019	0	-24	-616	3099	1376	2550
Car	Other	2034	0	-86	-310	3190	1716	2712
Car	Other	Total	0	-2020	-11420	90744	47411	77744
LGV	Business	2019	0	-6	-180	831	722	1023
LGV	Business	2034	0	-28	-102	846	765	1167
LGV	Business	Total	0	-641	-3521	24428	21884	32811
LGV	Commuting	2019	0	-3	-76	361	322	448
LGV	Commuting	2034	0	-11	-41	346	317	482
LGV	Commuting	Total	0	-264	-1421	10020	9123	13575
LGV	Other	2019	0	-1	-24	113	101	141
LGV	Other	2034	0	-4	-13	108	99	151
LGV	Other	Total	0	-83	-445	3140	2858	4253
OGV1	Business	2019	-2	-2	-38	196	251	508
OGV1	Business	2034	-0	-2	-34	172	265	547
OGV1	Business	Total	-14	-64	-1016	5137	7551	15527
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-1	7	10	20
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	3	4	9
OGV2	Business	2019	-1	-1	-44	216	271	547
OGV2	Business	2034	-0	-2	-38	184	279	583
OGV2	Business	Total	-8	-55	-1136	5538	7977	16542
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Pink Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	16	43	30	17	56	37	29
Car	Business	2034	1	27	61	41	22	79	59	40
Car	Business	Total	18	759	1751	1190	649	2260	1659	1152
Car	Commuting	2019	3	258	439	259	127	437	171	167
Car	Commuting	2034	4	374	604	363	167	645	273	228
Car	Commuting	Total	118	10674	17415	10408	4870	18335	7640	6582
Car	Other	2019	4	123	175	97	52	148	140	57
Car	Other	2034	8	213	266	151	80	241	217	71
Car	Other	Total	211	5888	7514	4248	2266	6725	6113	2080
LGV	Business	2019	1	18	20	8	4	14	15	9
LGV	Business	2034	1	28	31	11	6	20	21	12
LGV	Business	Total	28	776	862	327	170	567	604	343
LGV	Commuting	2019	1	20	23	9	5	16	17	10
LGV	Commuting	2034	1	31	35	13	7	23	24	13
LGV	Commuting	Total	31	883	981	372	194	646	688	390
LGV	Other	2019	0	7	8	3	2	5	6	4
LGV	Other	2034	0	11	12	5	2	8	8	5
LGV	Other	Total	11	304	338	128	67	222	237	135
OGV1	Business	2019	0	5	6	2	1	3	2	11
OGV1	Business	2034	0	6	9	3	1	4	3	15
OGV1	Business	Total	0	185	266	78	30	130	91	446
OGV1	Commuting	2019	0	1	2	0	0	1	1	3
OGV1	Commuting	2034	0	2	2	1	0	1	1	4
OGV1	Commuting	Total	0	47	68	20	8	33	23	114
OGV1	Other	2019	0	1	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	1	0	2
OGV1	Other	Total	0	21	30	9	3	15	10	51
OGV2	Business	2019	0	5	6	2	1	3	2	11
OGV2	Business	2034	0	7	9	3	1	4	3	15
OGV2	Business	Total	0	187	267	72	29	127	90	443
OGV2	Commuting	2019	0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	2	0	0	1	1	3
OGV2	Commuting	Total	0	32	46	12	5	22	16	77
OGV2	Other	2019	0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	0	0	2
OGV2	Other	Total	0	19	27	7	3	13	9	44

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	449	1164	824	458	1527	1018	804
Car	Business	2034	13	558	1254	844	458	1613	1211	815
Car	Business	Total	371	15394	35744	24352	13300	46177	33731	23581
Car	Commuting	2019	33	2685	4576	2693	1328	4546	1778	1736
Car	Commuting	2034	30	2758	4451	2671	1233	4754	2009	1681
Car	Commuting	Total	875	78584	128587	76771	36055	134856	55969	48610
Car	Other	2019	41	1161	1655	918	495	1404	1324	543
Car	Other	2034	51	1428	1780	1011	538	1612	1454	472
Car	Other	Total	1401	39044	50162	28323	15118	44749	40763	14052
LGV	Business	2019	18	485	545	214	115	380	396	244
LGV	Business	2034	20	564	625	235	121	406	435	242
LGV	Business	Total	562	15786	17566	6672	3475	11585	12331	7032
LGV	Commuting	2019	8	211	237	93	50	165	172	106
LGV	Commuting	2034	8	231	256	96	50	166	178	99
LGV	Commuting	Total	231	6479	7206	2740	1428	4758	5063	2890
LGV	Other	2019	2	66	74	29	16	52	54	33
LGV	Other	2034	3	72	80	30	16	52	56	31
LGV	Other	Total	72	2029	2257	858	447	1490	1586	905
OGV1	Business	2019	0	123	173	50	20	91	63	306
OGV1	Business	2034	0	132	192	56	22	92	65	317
OGV1	Business	Total	3	3774	5430	1580	620	2653	1869	9116
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	0	126	168	47	19	87	58	308

Pink Route Option - 30 year

OGV2	Business	2034	0	133	194	52	21	90	65	314
OGV2	Business	Total	3	3816	5442	1462	590	2591	1832	9064
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	453	1156	811	453	1512	1012	810
Car	Business	2034	13	563	1252	837	456	1605	1209	819
Car	Business	Total	375	15515	35643	24107	13214	45928	33648	23701
Car	Commuting	2019	38	3037	4829	2514	1383	3726	1139	1743
Car	Commuting	2034	33	3041	4608	2509	1272	4324	1538	1685
Car	Commuting	Total	985	86873	133572	72213	37240	120424	41868	48748
Car	Other	2019	47	1257	1489	761	461	687	1130	554
Car	Other	2034	57	1505	1646	872	497	866	1302	478
Car	Other	Total	1549	41288	46254	24385	14055	24382	36305	14241
LGV	Business	2019	18	492	547	207	111	372	396	248
LGV	Business	2034	20	571	628	231	119	400	435	244
LGV	Business	Total	570	15982	17628	6530	3398	11411	12337	7106
LGV	Commuting	2019	8	213	239	94	50	167	173	107
LGV	Commuting	2034	8	233	258	97	50	167	179	99
LGV	Commuting	Total	233	6540	7273	2766	1440	4792	5088	2901
LGV	Other	2019	2	67	75	30	16	52	54	33
LGV	Other	2034	3	73	81	30	16	52	56	31
LGV	Other	Total	73	2049	2279	867	451	1501	1594	909
OGV1	Business	2019	0	142	193	54	22	99	68	336
OGV1	Business	2034	0	147	209	60	23	98	69	341
OGV1	Business	Total	4	4206	5920	1691	665	2834	1993	9810
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	7	11	3	1	4	2	7
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	3	5	1	1	2	1	3
OGV2	Business	2019	0	164	207	56	22	102	69	366
OGV2	Business	2034	0	161	227	58	24	102	73	361
OGV2	Business	Total	4	4660	6399	1665	677	2940	2079	10436
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	2019	2034
Road	3.01%	4.10%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus		
Travel Time	591103	591103	0		
Vehicle operating costs	-18110	-18110	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - COMMUTING BENEFITS	572992	572992	0		
Consumer - Other user benefits	All Modes	Road	Bus		
Travel Time	243257	243257	0		
Vehicle operating costs	-31060	-31060	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - OTHER BENEFITS	212197	212197	0		
Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	317495	267651	49844	0	0
Vehicle operating costs	5578	-558	6135	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0

Pink Route Option - 30 year

Subtotal	323073	267093	55980	0	0
Private Sector Provider Impacts					
Revenue	0	0	0	0	0
Operating costs	0	0	0	0	0
Investment costs	0	0	0	0	0
Grant/subsidy	0	0	0	0	0
Subtotal	0	0	0	0	0
Other business Impacts					
Developer contributions	0	0	0	0	0
NET BUSINESS IMPACT	323073				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1108262				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts				
Local Government Funding	ALL MODES	Road	Bus	
Revenue	0	0	0	
Operating Costs	0	0	0	
Investment Costs	0	0	0	
Developer Contributions	0	0	0	
Grant/Subsidy Payments	0	0	0	
NET IMPACT	0	0	0	
Central Government Funding: Transport	ALL MODES	Road	Bus	
Revenue	0	0	0	
Operating costs	28536	28536	0	
Investment costs	417635	417635	0	
Developer Contributions	0	0	0	
Grant/Subsidy Payments	0	0	0	
NET IMPACT	446171	446171	0	
Central Government Funding: Non-Transport				
Indirect Tax Revenues	1779	1779	0	
TOTALS				
Broad Transport Budget	446171	446171	0	
Wider Public Finances	1779	1779	0	

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	39
Economic Efficiency: Consumer Users (Commuting)	572992
Economic Efficiency: Consumer Users (Other)	212197
Economic Efficiency: Business Users and Providers	323073
Wider Public Finances (Indirect Taxation Revenues)	-1779
Present Value of Benefits (PVB)	1106522
Broad Transport Budget	446171
Present Value of Costs (PVC)	446171
OVERALL IMPACTS	
Net Present Value (NPV)	660351
Benefit to Cost Ratio (BCR)	2.480

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Pink_V2 30.txt

Pink Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\PINK_30.OUT

Elapsed time :

Pink Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 10:17:51

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
125850 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
133	1	1	OGV1	Business	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV1	Commuting	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV1	Other	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV2	Business	All	2034	0.110	0.299	0.368	0.001	0.001
133	1	1	OGV2	Commuting	All	2034	0.110	0.299	0.368	0.001	0.001

Displayed 5 warnings of a total of 161 of this type.

Warning (375 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
105	9	1	OGV2	Other	All	2034	0.627	0.172	3.637	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.172	3.637	0.001	0.001
105	9	1	OGV2	Business	All	2034	0.627	0.172	3.637	0.001	0.001

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105	9	1	OGV1	Commuting	All	2034	0.621	0.172	3.604	0.001	0.001
105	9	1	OGV1	Other	All	2034	0.621	0.172	3.604	0.001	0.001

Displayed 5 warnings of a total of 102839 of this type.

Warning (12 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
133	1	1	OGV1	Commuting	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV2	Business	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV1	Other	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV2	Commuting	All	2034	0.840	6.049	0.139	0.001	0.001
133	1	1	OGV1	Business	All	2034	0.840	6.049	0.139	0.001	0.001

Displayed 5 warnings of a total of 18851 of this type.

Warning (3449 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.023
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.023
73	8	1	Car	Other	All	2034	5.299	1.364	3.885	0.048	0.046
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3449 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV1	Business	All	2019	0.794	0.208	3.815	0.003
79	8	1	OGV2	Commuting	All	2019	0.794	0.208	3.815	0.001
79	8	1	OGV2	Business	All	2019	0.794	0.208	3.815	0.003
79	8	1	OGV1	Commuting	All	2019	0.794	0.208	3.815	0.001
79	8	1	OGV1	Other	All	2019	0.794	0.208	3.815	0.000

Displayed 5 warnings of a total of 97 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base    120.60 0.00 0.00
av_ind_tax  19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base    100.00 0.00 0.00
av_ind_tax  19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Pink Route Option - 60 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Pink Route Option - 60 year

```

VALUE_OF_TIME - (std)
* Pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Pink Route Option - 60 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Pink Route Option - 60 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Pink Route Option - 60 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Pink Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Pink Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Pink Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Pink Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Pink Route Option - 60 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

Pink Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Pink Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	419056	419056
Road	2020	0	1366	1366
Road	2021	0	1313	1313
Road	2022	0	1306	1306
Road	2023	0	1256	1256
Road	2024	0	1208	1208
Road	2025	0	1200	1200
Road	2026	0	1154	1154
Road	2027	0	1110	1110
Road	2028	0	1067	1067
Road	2029	0	1059	1059
Road	2030	0	1018	1018
Road	2031	0	979	979
Road	2032	0	971	971
Road	2033	0	933	933
Road	2034	0	898	898
Road	2035	0	889	889
Road	2036	0	855	855
Road	2037	0	822	822
Road	2038	0	814	814
Road	2039	0	782	782
Road	2040	0	752	752
Road	2041	0	744	744
Road	2042	0	715	715
Road	2043	0	707	707
Road	2044	0	680	680
Road	2045	0	654	654
Road	2046	0	646	646
Road	2047	0	621	621
Road	2048	0	597	597
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Pink Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	446171	446171
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112221
Car	2019	All	113832	112221
Car	2034	AM Hour 8-9	127298	125570
Car	2034	All	127298	125570
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127548
All	2019	All	129159	127548
All	2034	AM Hour 8-9	144161	142432
All	2034	All	144161	142432

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	978298	0	4548	210682
Road	2034	820412	0	3541	128265	795265	0	3306	130181

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3484	1156
Car	2034	4630	1659	4313	1545
LGV	2019	85	480	81	457
LGV	2034	97	549	91	514
OGV1	2019	53	302	52	293
OGV1	2034	59	332	56	318
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3616	1906
All	2034	4785	2539	4460	2378
Car	Total	276503	98698	257934	92067
LGV	Total	5808	32910	5457	30922
OGV1	Total	3529	20000	3392	19222
OGV2	Total	0	0	0	0
All	Total	285839	151607	266783	142210

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3015	-186	86	81	-5	24	23	-1	24	23	-1
Car	2034	4095	3815	-280	127	119	-9	17	16	-1	17	16	-1
LGV	2019	397	378	-19	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	426	-28	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	242	-8	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	264	-11	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3636	-213	104	98	-6	29	27	-2	29	27	-2
All	2020	3953	3731	-222	108	102	-6	29	27	-2	29	27	-2
All	2021	4061	3829	-231	112	105	-6	28	27	-2	28	27	-2
All	2022	4171	3930	-241	116	109	-7	28	26	-2	28	26	-2

Pink Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3636	-213	104	98	-6	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4505	-319	150	140	-10	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	269411	-18698	10560	9872	-688	815	763	-52	815	763	-52

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Pink Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User Time	User_Charges PT_fares_pri	Vehicle_Operating_Cost Fuel	Operator_Rev Non_fuel	Operator_Rev PT_fares_pri	Indirect Taxes
Road	2019	38575	0	325	-2212	0	-71
Road	2020	39048	0	330	-2192	0	-72
Road	2021	39325	0	334	-2171	0	-73
Road	2022	39572	0	338	-2148	0	-74
Road	2023	39789	0	342	-2123	0	-75
Road	2024	39977	0	346	-2098	0	-76
Road	2025	40137	0	343	-2071	0	-74
Road	2026	40271	0	340	-2043	0	-72
Road	2027	40380	0	337	-2014	0	-71
Road	2028	40464	0	334	-1984	0	-69
Road	2029	40525	0	330	-1954	0	-68
Road	2030	40564	0	327	-1923	0	-66
Road	2031	40582	0	321	-1891	0	-65
Road	2032	40579	0	316	-1860	0	-63
Road	2033	40557	0	310	-1827	0	-62
Road	2034	40516	0	305	-1795	0	-60
Road	2035	39624	0	293	-1726	0	-58
Road	2036	38751	0	282	-1659	0	-56
Road	2037	37898	0	271	-1596	0	-53
Road	2038	37064	0	261	-1534	0	-51
Road	2039	36249	0	251	-1475	0	-49
Road	2040	35451	0	241	-1419	0	-47
Road	2041	34671	0	232	-1364	0	-46
Road	2042	33909	0	223	-1312	0	-44
Road	2043	33163	0	214	-1261	0	-42
Road	2044	32433	0	206	-1213	0	-41
Road	2045	31720	0	198	-1166	0	-39
Road	2046	31023	0	190	-1121	0	-38
Road	2047	30341	0	183	-1078	0	-36
Road	2048	29674	0	176	-1037	0	-35
Road	2049	29022	0	169	-997	0	-33
Road	2050	28385	0	163	-958	0	-32
Road	2051	27761	0	157	-921	0	-31
Road	2052	27151	0	151	-886	0	-30
Road	2053	26555	0	145	-852	0	-29
Road	2054	25972	0	139	-819	0	-27
Road	2055	25402	0	134	-788	0	-26
Road	2056	24844	0	129	-757	0	-25
Road	2057	24299	0	124	-728	0	-24
Road	2058	23765	0	119	-700	0	-23
Road	2059	23244	0	114	-673	0	-23
Road	2060	22734	0	110	-647	0	-22
Road	2061	22235	0	106	-622	0	-21
Road	2062	21747	0	102	-599	0	-20
Road	2063	21270	0	98	-576	0	-19
Road	2064	20804	0	94	-553	0	-19
Road	2065	20348	0	90	-532	0	-18
Road	2066	19902	0	87	-512	0	-17
Road	2067	19466	0	84	-492	0	-16
Road	2068	19039	0	80	-473	0	-16
Road	2069	18622	0	77	-455	0	-15
Road	2070	18214	0	74	-437	0	-15
Road	2071	17815	0	71	-421	0	-14
Road	2072	17425	0	69	-404	0	-14
Road	2073	17043	0	66	-389	0	-13
Road	2074	16670	0	64	-374	0	-13
Road	2075	16305	0	61	-359	0	-12
Road	2076	15948	0	59	-346	0	-12
Road	2077	15599	0	56	-332	0	-11
Road	2078	15258	0	54	-320	0	-11
Road	2079	15521	0	54	-320	0	-11
Road	Total	1781195	0	11598	-69507	0	-2356

Pink Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Car	2019	33172	0	296	-2453	0
Car	2034	34700	0	279	-1992	0
LGV	2019	3766	0	21	-15	0
LGV	2034	4071	0	18	-7	0
OGV1	2019	825	0	8	82	0
OGV1	2034	876	0	7	66	0
OGV2	2019	813	0	0	175	0
OGV2	2034	868	0	0	138	0
All	2019	38575	0	325	-2212	0
All	2034	40516	0	305	-1795	0
Car	Total	1520529	0	10622	-77135	0
LGV	Total	181442	0	702	-314	0
OGV1	Total	39799	0	273	2553	0
OGV2	Total	39426	0	0	5390	0
All	Total	1781196	0	11598	-69507	0

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	38575	0	325	-2212	0
All	2034	40516	0	305	-1795	0
All	Total	1781196	0	11598	-69507	0

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	10291	0	38	181	0
Business	2034	11159	0	34	162	0
Commuting	2019	20417	0	216	-1170	0
Commuting	2034	20670	0	199	-765	0
Other	2019	7867	0	71	-1223	0
Other	2034	8687	0	72	-1192	0
Business	Total	505463	0	1307	6159	0
Commuting	Total	901875	0	7605	-31152	0
Other	Total	373858	0	2686	-44515	0

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	38575	0	325	-2212	0
AM Hour 8-9	2034	40516	0	305	-1795	0
AM Hour 8-9	Total	1781196	0	11598	-69507	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-0	-11	49	49	142
Car	Business	2034	0	-1	-7	59	81	199
Car	Business	Total	0	-42	-462	3506	4661	11690
Car	Commuting	2019	-0	-6	-39	269	548	1088
Car	Commuting	2034	0	-3	-32	277	734	1683
Car	Commuting	Total	-0	-204	-2016	16823	43296	97916
Car	Other	2019	0	-3	-105	301	214	389
Car	Other	2034	0	-12	-79	476	330	532
Car	Other	Total	0	-686	-5027	27642	19197	31318
LGV	Business	2019	0	-0	-6	30	27	38
LGV	Business	2034	0	-1	-5	41	38	57
LGV	Business	Total	0	-73	-306	2408	2204	3324
LGV	Commuting	2019	0	-0	-7	34	31	43
LGV	Commuting	2034	0	-2	-5	47	43	65
LGV	Commuting	Total	0	-83	-348	2741	2508	3783
LGV	Other	2019	0	-0	-2	12	11	15
LGV	Other	2034	0	-1	-2	16	15	22
LGV	Other	Total	0	-28	-120	944	864	1304
OGV1	Business	2019	-0	-0	-1	6	8	17
OGV1	Business	2034	-0	-0	-2	8	12	25
OGV1	Business	Total	-1	-7	-92	456	706	1447
OGV1	Commuting	2019	-0	-0	-0	2	2	4

Pink Route Option - 60 year

OGV1	Commuting	2034	-0	-0	-0	2	3	6
OGV1	Commuting	Total	-0	-2	-23	117	181	370
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-0	-1	-10	52	80	165
OGV2	Business	2019	-0	-0	-1	6	8	17
OGV2	Business	2034	-0	-0	-2	8	12	25
OGV2	Business	Total	-1	-7	-95	453	691	1446
OGV2	Commuting	2019	-0	-0	-0	1	1	3
OGV2	Commuting	2034	-0	-0	-0	1	2	4
OGV2	Commuting	Total	-0	-1	-17	79	120	251
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-0	-1	-10	45	69	145

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-3	-303	1347	1338	3878
Car	Business	2034	0	-16	-144	1202	1649	4076
Car	Business	Total	0	-629	-7774	56190	73349	185506
Car	Commuting	2019	-0	-58	-401	2802	5705	11327
Car	Commuting	2034	0	-22	-237	2039	5408	12399
Car	Commuting	Total	-0	-1228	-11563	94653	238586	534333
Car	Other	2019	0	-28	-990	2851	2021	3686
Car	Other	2034	0	-84	-529	3188	2209	3563
Car	Other	Total	0	-3256	-26471	136937	95235	156663
LGV	Business	2019	0	-7	-173	821	733	1023
LGV	Business	2034	0	-27	-99	837	768	1168
LGV	Business	Total	0	-1101	-5071	38282	34974	52515
LGV	Commuting	2019	0	-3	-75	357	319	445
LGV	Commuting	2034	0	-11	-40	343	315	478
LGV	Commuting	Total	0	-429	-2017	15090	13781	20670
LGV	Other	2019	0	-1	-24	112	100	139
LGV	Other	2034	0	-3	-13	107	99	150
LGV	Other	Total	0	-134	-632	4726	4316	6474
OGV1	Business	2019	-2	-2	-34	174	230	459
OGV1	Business	2034	-0	-3	-32	157	247	507
OGV1	Business	Total	-17	-118	-1467	7308	11188	22904
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-1	-1	-37	174	225	454
OGV2	Business	2034	-0	-3	-33	155	241	507
OGV2	Business	Total	-11	-112	-1526	7255	10955	22866
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	0	-3	-317	1337	1315	3887
Car	Business	2034	0	-16	-145	1202	1630	4083
Car	Business	Total	0	-632	-7902	56126	72617	185785
Car	Commuting	2019	-0	-46	214	4138	5494	8610
Car	Commuting	2034	0	-11	181	3056	5471	10313
Car	Commuting	Total	-0	-817	5315	134607	239126	452636
Car	Other	2019	0	-24	-616	3099	1376	2550
Car	Other	2034	0	-86	-310	3190	1716	2712
Car	Other	Total	0	-3300	-17267	138696	75888	123136
LGV	Business	2019	0	-6	-180	831	722	1023
LGV	Business	2034	0	-28	-102	846	765	1167
LGV	Business	Total	0	-1103	-5211	38612	34787	52475
LGV	Commuting	2019	0	-3	-76	361	322	448
LGV	Commuting	2034	0	-11	-41	346	317	482
LGV	Commuting	Total	0	-432	-2031	15201	13875	20800
LGV	Other	2019	0	-1	-24	113	101	141
LGV	Other	2034	0	-4	-13	108	99	151
LGV	Other	Total	0	-135	-636	4763	4347	6517

Pink Route Option - 60 year

OGV1	Business	2019	-2	-2	-38	196	251	508
OGV1	Business	2034	-0	-2	-34	172	265	547
OGV1	Business	Total	-14	-105	-1574	7921	11878	24451
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-2	9	13	27
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	4	6	12
OGV2	Business	2019	-1	-1	-44	216	271	547
OGV2	Business	2034	-0	-0	-38	184	279	583
OGV2	Business	Total	-10	-94	-1734	8433	12404	25817
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	16	43	30	17	56	37	29
Car	Business	2034	1	27	61	41	22	79	59	40
Car	Business	Total	37	1576	3589	2427	1321	4623	3434	2347
Car	Commuting	2019	3	258	439	259	127	437	171	167
Car	Commuting	2034	4	374	604	363	167	645	273	228
Car	Commuting	Total	238	21907	35544	21285	9893	37696	15824	13427
Car	Other	2019	4	123	175	97	52	148	140	57
Car	Other	2034	8	213	266	151	80	241	217	71
Car	Other	Total	442	12288	15491	8777	4675	13950	12626	4195
LGV	Business	2019	1	18	20	8	4	14	15	9
LGV	Business	2034	1	28	31	11	6	20	21	12
LGV	Business	Total	57	1602	1779	672	348	1161	1241	697
LGV	Commuting	2019	1	20	23	9	5	16	17	10
LGV	Commuting	2034	1	31	35	13	7	23	24	13
LGV	Commuting	Total	65	1824	2024	764	396	1322	1413	793
LGV	Other	2019	0	7	8	3	2	5	6	4
LGV	Other	2034	0	11	12	5	2	8	8	5
LGV	Other	Total	22	628	697	263	136	455	487	273
OGV1	Business	2019	0	5	6	2	1	3	2	11
OGV1	Business	2034	0	6	9	3	1	4	3	15
OGV1	Business	Total	0	379	548	160	63	264	187	910
OGV1	Commuting	2019	0	1	2	0	0	1	1	3
OGV1	Commuting	2034	0	2	2	1	0	1	1	4
OGV1	Commuting	Total	0	97	140	41	16	67	48	233
OGV1	Other	2019	0	1	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	1	0	2
OGV1	Other	Total	0	43	62	18	7	30	21	104
OGV2	Business	2019	0	5	6	2	1	3	2	11
OGV2	Business	2034	0	7	9	3	1	4	3	15
OGV2	Business	Total	0	382	552	147	60	259	185	902
OGV2	Commuting	2019	0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	2	0	0	1	1	3
OGV2	Commuting	Total	0	66	96	26	10	45	32	157
OGV2	Other	2019	0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	0	0	2
OGV2	Other	Total	0	38	55	15	6	26	19	91

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	449	1164	824	458	1527	1018	804
Car	Business	2034	13	558	1254	844	458	1613	1211	815
Car	Business	Total	590	24793	56872	38573	21021	73344	54131	37317
Car	Commuting	2019	33	2685	4576	2693	1328	4546	1778	1736
Car	Commuting	2034	30	2758	4451	2671	1233	4754	2009	1681
Car	Commuting	Total	1319	120049	195512	116923	54595	206326	86178	73879
Car	Other	2019	41	1161	1655	918	495	1404	1324	543
Car	Other	2034	51	1428	1780	1011	538	1612	1454	472
Car	Other	Total	2174	60520	76929	43520	23204	68991	62620	21149
LGV	Business	2019	18	485	545	214	115	380	396	244
LGV	Business	2034	20	564	625	235	121	406	435	242
LGV	Business	Total	897	25286	28089	10634	5521	18417	19653	11102
LGV	Commuting	2019	8	211	237	93	50	165	172	106
LGV	Commuting	2034	8	231	256	96	50	166	178	99

Pink Route Option - 60 year

LGV	Commuting	Total	353	9951	11055	4188	2175	7255	7739	4378
LGV	Other	2019	2	66	74	29	16	52	54	33
LGV	Other	2034	3	72	80	30	16	52	56	31
LGV	Other	Total	111	3117	3463	1312	681	2272	2424	1371
OGV1	Business	2019	0	123	173	50	20	91	63	306
OGV1	Business	2034	0	132	192	56	22	92	65	317
OGV1	Business	Total	6	6004	8665	2522	989	4196	2963	14454
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	0	126	168	47	19	87	58	308
OGV2	Business	2034	0	133	194	52	21	90	65	314
OGV2	Business	Total	5	6059	8713	2329	942	4108	2922	14348
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	12	453	1156	811	453	1512	1012	810
Car	Business	2034	13	563	1252	837	456	1605	1209	819
Car	Business	Total	595	24958	56751	38254	20912	73024	54029	37472
Car	Commuting	2019	38	3037	4829	2514	1383	3726	1139	1743
Car	Commuting	2034	33	3041	4608	2509	1272	4324	1538	1685
Car	Commuting	Total	1465	131061	201998	110811	56152	187770	67552	74056
Car	Other	2019	47	1257	1489	761	461	687	1130	554
Car	Other	2034	57	1505	1646	872	497	866	1302	478
Car	Other	Total	2373	63501	71728	38250	21753	41451	56706	21391
LGV	Business	2019	18	492	547	207	111	372	396	248
LGV	Business	2034	20	571	628	231	119	400	435	244
LGV	Business	Total	908	25551	28188	10449	5420	18187	19662	11198
LGV	Commuting	2019	8	213	239	94	50	167	173	107
LGV	Commuting	2034	8	233	258	97	50	167	179	99
LGV	Commuting	Total	356	10033	11146	4222	2192	7299	7772	4393
LGV	Other	2019	2	67	75	30	16	52	54	33
LGV	Other	2034	3	73	81	30	16	52	56	31
LGV	Other	Total	112	3144	3492	1323	687	2287	2435	1376
OGV1	Business	2019	0	142	193	54	22	99	68	336
OGV1	Business	2034	0	147	209	60	23	98	69	341
OGV1	Business	Total	6	6576	9318	2671	1048	4436	3127	15376
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	9	14	4	2	5	3	10
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	4	6	2	1	2	1	4
OGV2	Business	2019	0	164	207	56	22	102	69	366
OGV2	Business	2034	0	161	227	58	24	102	73	361
OGV2	Business	Total	6	7175	9988	2599	1057	4571	3249	16172
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	3.01%	4.10%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	901875	901875	0
Vehicle operating costs	-23547	-23547	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Pink Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	878328	878328	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	373858	373858	0
Vehicle operating costs	-41829	-41829	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	332029	332029	0

Business	All Modes	Road	Personal	Road	Freight	Bus	Personal	Bus	Freight
Travel Time	505463		426238		79225		0		0
Vehicle operating costs	7467		-682		8148		0		0
User charges	0		0		0		0		0
During Construction & Maintenance	0		0		0		0		0
Subtotal	512930		425557		87374		0		0

Private Sector Provider Impacts					
Revenue	0		0		0
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	0		0		0

Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	512930				

TOTAL
 Present Value of Transport Economic
 Efficiency Benefits (TEE) 1723287

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	28536	28536	0
Investment costs	417635	417635	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	446171	446171	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	2356	2356	0

TOTALS			
Broad Transport Budget	446171	446171	0
Wider Public Finances	2356	2356	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	52
Economic Efficiency: Consumer Users (Commuting)	878328
Economic Efficiency: Consumer Users (Other)	332029
Economic Efficiency: Business Users and Providers	512930
Wider Public Finances (Indirect Taxation Revenues)	-2356
Present Value of Benefits (PVB)	1720983
Broad Transport Budget	446171
Present Value of Costs (PVC)	446171

OVERALL IMPACTS

Pink Route Option - 60 year

Net Present Value (NPV)	1274812
Benefit to Cost Ratio (BCR)	3.857

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Pink_V2 60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\PINK_60.OUT

Elapsed time :

Red Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:20:09

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 158675 Warnings found

Warning (213 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
149	168	2	Car	Other	All	2034	0.023	0.142	0.158	0.039	0.028
149	168	2	Car	Business	All	2034	0.023	0.142	0.158	0.001	0.001
149	168	2	Car	Commuting	All	2034	0.023	0.142	0.158	0.011	0.008
149	168	2	LGV	Business	All	2034	0.023	0.142	0.158	0.003	0.003
149	168	2	LGV	Commuting	All	2034	0.023	0.142	0.158	0.003	0.003

Displayed 5 warnings of a total of 6643 of this type.

Warning (203 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Business	All	2034	0.232	0.046	4.997	0.005	0.005
79	8	1	OGV2	Other	All	2034	0.232	0.046	4.997	0.005	0.005
79	8	1	OGV2	Commuting	All	2034	0.232	0.046	4.997	0.005	0.005

Red Route Option - 30 year

79	8	1	OGV1	Other	All	2034	0.231	0.046	4.980	0.005	0.005
79	8	1	OGV1	Commuting	All	2034	0.231	0.046	4.980	0.005	0.005

Displayed 5 warnings of a total of 124342 of this type.

Warning (998 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
148	149	1	Car	Business	All	2034	0.420	3.227	0.130	0.000	0.000
148	149	2	Car	Business	All	2019	0.420	3.227	0.130	0.001	0.001
148	149	2	Car	Business	All	2034	0.420	3.227	0.130	0.001	0.001
148	149	1	Car	Other	All	2019	0.420	3.227	0.130	0.018	0.014
148	149	1	Car	Business	All	2019	0.420	3.227	0.130	0.000	0.000

Displayed 5 warnings of a total of 23247 of this type.

Warning (3942 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
105	108	2	Car	Commuting	All	2034	1.173	0.258	4.547	0.044	0.017
105	108	1	Car	Commuting	All	2034	1.173	0.258	4.547	0.009	0.003
105	108	1	Car	Commuting	All	2019	1.173	0.258	4.547	0.005	0.005
105	108	1	Car	Commuting	All	2019	1.173	0.258	4.547	0.009	0.004
105	108	2	Car	Commuting	All	2019	1.173	0.258	4.547	0.045	0.020

Displayed 5 warnings of a total of 3942 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
6	37	2	Car	Other	All	2034	0.161	0.035	4.600	0.520
6	37	2	LGV	Business	All	2034	0.161	0.035	4.600	0.070
6	37	2	Car	Business	All	2034	0.161	0.035	4.600	0.079
6	37	2	Car	Commuting	All	2034	0.161	0.035	4.600	0.012
6	37	2	LGV	Commuting	All	2034	0.161	0.035	4.600	0.078

Displayed 5 warnings of a total of 48 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.023

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Red Route Option - 30 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.

*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour

*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Red Route Option - 30 year

```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Red Route Option - 30 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Red Route Option - 30 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

Red Route Option - 30 year

2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Red Route Option - 30 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Red Route Option - 30 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Red Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Red Route Option - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Red Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Red Route Option - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
  
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2010        2010     1           5.0      6.5
2011        2080     1           0.0      0.0
2010        2010     2           7.9     10.3
2011        2080     2           0.0      0.0
2010        2010     3           7.9     10.3
2011        2080     3           0.0      0.0
2010        2010     4           7.9     10.3
2011        2080     4           0.0      0.0
2010        2010     5           7.9     10.3
2011        2080     5           0.0      0.0
2010        2010     6           7.9     10.3
2011        2080     6           0.0      0.0
2010        2010     7           0.0      0.0
2011        2080     7           0.0      0.0
  
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2011        2011     1          14.3      0.0
2011        2011     2          14.3      0.0
2011        2011     3          14.3      0.0
2011        2011     4          14.3      0.0
2011        2011     5          14.3      0.0
2011        2011     6          14.3      0.0
2011        2011     7           0.0      0.0
2011        2011     8           0.0      0.0
2012        2100     1           0.0      0.0
2012        2100     2           0.0      0.0
2012        2100     3           0.0      0.0
2012        2100     4           0.0      0.0
2012        2100     5           0.0      0.0
2012        2100     6           0.0      0.0
2012        2100     7           0.0      0.0
2012        2100     8           0.0      0.0
  
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1         12.0    10.3
1               2         42.9    42.2
1               3         45.1    47.5
2               1         40.2    50.3
2               2         45.1    35.1
2               3         14.7    14.6
3               1         75.6    81.3
3               2         17.0    11.1
3               3          7.4     7.6
4               1         79.7    86.9
4               2         13.2     7.8
4               3          7.1     5.3
5               1         10.2    10.2
5               2         18.9    18.9
5               3         70.8    70.8
6               1         10.2    10.2
6               2         18.9    18.9
6               3         70.8    70.8
7               1         10.2    10.2
7               2         18.9    18.9
7               3         70.8    70.8
  
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1         18.1    13.0    19.9    12.3    3.2
  
```


Red Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Red Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	601468	601468
Road	2020	0	1719	1719
Road	2021	0	1652	1652
Road	2022	0	1644	1644
Road	2023	0	1580	1580
Road	2024	0	1520	1520
Road	2025	0	1510	1510
Road	2026	0	1452	1452
Road	2027	0	1396	1396
Road	2028	0	1342	1342
Road	2029	0	1332	1332
Road	2030	0	1281	1281
Road	2031	0	1232	1232
Road	2032	0	1221	1221
Road	2033	0	1174	1174
Road	2034	0	1129	1129
Road	2035	0	1119	1119
Road	2036	0	1076	1076
Road	2037	0	1034	1034
Road	2038	0	1024	1024
Road	2039	0	984	984
Road	2040	0	947	947
Road	2041	0	936	936
Road	2042	0	900	900
Road	2043	0	890	890
Road	2044	0	855	855
Road	2045	0	823	823
Road	2046	0	812	812
Road	2047	0	781	781
Road	2048	0	751	751
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Red Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	635586	635586
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112213
Car	2019	All	113832	112213
Car	2034	AM Hour 8-9	127298	125611
Car	2034	All	127298	125611
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127539
All	2019	All	129159	127539
All	2034	AM Hour 8-9	144161	142473
All	2034	All	144161	142473

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	973032	0	4496	212154
Road	2034	820412	0	3541	128265	792292	0	3282	131264

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3441	1142
Car	2034	4630	1659	4281	1534
LGV	2019	85	480	80	452
LGV	2034	97	549	90	511
OGV1	2019	53	302	51	291
OGV1	2034	59	332	56	317
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3572	1885
All	2034	4785	2539	4427	2362
Car	Total	137617	48941	127436	45319
LGV	Total	2904	16455	2714	15382
OGV1	Total	1773	10047	1698	9621
OGV2	Total	0	0	0	0
All	Total	142294	75442	131849	70322

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2978	-223	86	80	-6	24	22	-2	24	22	-2
Car	2034	4095	3787	-308	127	118	-10	17	16	-1	17	16	-1
LGV	2019	397	375	-23	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	423	-31	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	241	-9	7	6	-0	2	2	-0	2	2	-0
OGV1	2034	275	263	-12	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3594	-255	104	97	-7	29	27	-2	29	27	-2
All	2020	3953	3689	-264	108	100	-7	29	27	-2	29	27	-2
All	2021	4061	3787	-273	112	104	-8	28	26	-2	28	26	-2
All	2022	4171	3888	-283	116	108	-8	28	26	-2	28	26	-2

Red Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3594	-255	104	97	-7	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4473	-351	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	133176	-10227	4499	4178	-322	622	578	-44	622	578	-44

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	49725	0	407	-3620	0	-66
Road	2020	49911	0	409	-3577	0	-66
Road	2021	49867	0	411	-3533	0	-66
Road	2022	49800	0	413	-3486	0	-67
Road	2023	49711	0	414	-3438	0	-67
Road	2024	49603	0	416	-3388	0	-68
Road	2025	49476	0	410	-3337	0	-65
Road	2026	49330	0	404	-3285	0	-63
Road	2027	49166	0	398	-3232	0	-61
Road	2028	48986	0	392	-3178	0	-59
Road	2029	48790	0	385	-3124	0	-57
Road	2030	48579	0	379	-3069	0	-55
Road	2031	48354	0	371	-3014	0	-53
Road	2032	48115	0	363	-2958	0	-51
Road	2033	47864	0	355	-2902	0	-49
Road	2034	47600	0	347	-2846	0	-48
Road	2035	46552	0	334	-2737	0	-46
Road	2036	45527	0	321	-2632	0	-44
Road	2037	44525	0	308	-2530	0	-42
Road	2038	43545	0	297	-2433	0	-41
Road	2039	42587	0	285	-2340	0	-39
Road	2040	41650	0	274	-2250	0	-38
Road	2041	40734	0	264	-2163	0	-36
Road	2042	39838	0	254	-2080	0	-35
Road	2043	38961	0	244	-2000	0	-34
Road	2044	38105	0	234	-1923	0	-32
Road	2045	37267	0	225	-1849	0	-31
Road	2046	36447	0	217	-1778	0	-30
Road	2047	35646	0	208	-1709	0	-29
Road	2048	34863	0	200	-1644	0	-28
Road	2049	34097	0	193	-1580	0	-26
Road	Total	1385220	0	10132	-83634	0	-1492

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	43069	0	372	-3853	0	-48
Car	2034	40862	0	319	-2979	0	-35
LGV	2019	4757	0	25	-55	0	-12
LGV	2034	4839	0	20	-76	0	-9
OGV1	2019	951	0	10	91	0	-5
OGV1	2034	956	0	8	63	0	-4
OGV2	2019	947	0	0	197	0	0
OGV2	2034	943	0	0	145	0	0
All	2019	49725	0	407	-3620	0	-66

Red Route Option - 30 year

All	2034	47600	0	347	-2846	0	-48
Car	Total	1190837	0	9312	-87957	0	-1106
LGV	Total	139267	0	588	-1942	0	-278
OGV1	Total	27708	0	232	1919	0	-108
OGV2	Total	27407	0	0	4346	0	0
All	Total	1385220	0	10132	-83634	0	-1492

PERSON TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
All	2019	49725	0	407	-3620	0	-66
All	2034	47600	0	347	-2846	0	-48
All	Total	1385220	0	10132	-83634	0	-1492

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
Business	2019	13137	0	45	-53	0	-20
Business	2034	13100	0	38	-41	0	-15
Commuting	2019	26099	0	271	-1397	0	-83
Commuting	2034	23770	0	225	-1023	0	-66
Other	2019	10488	0	91	-2169	0	37
Other	2034	10731	0	85	-1782	0	33
Business	Total	380478	0	1107	-1223	0	-457
Commuting	Total	698677	0	6615	-30709	0	-1967
Other	Total	306065	0	2410	-51702	0	932

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
						Taxes	
AM Hour 8-9	2019	49725	0	407	-3620	0	-66
AM Hour 8-9	2034	47600	0	347	-2846	0	-48
AM Hour 8-9	Total	1385220	0	10132	-83634	0	-1492

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-3	-6	-12	39	97	186
Car	Business	2034	-3	-8	-12	40	102	275
Car	Business	Total	-102	-243	-375	1238	3127	7812
Car	Commuting	2019	-12	-27	-56	232	640	1603
Car	Commuting	2034	-14	-33	-58	222	609	2327
Car	Commuting	Total	-415	-985	-1781	6952	19129	66338
Car	Other	2019	-25	-60	-136	319	482	483
Car	Other	2034	-33	-76	-141	393	652	748
Car	Other	Total	-954	-2233	-4337	11588	18864	21063
LGV	Business	2019	-5	-5	-8	30	41	58
LGV	Business	2034	-5	-7	-9	31	53	90
LGV	Business	Total	-145	-189	-273	948	1543	2540
LGV	Commuting	2019	-5	-5	-9	34	47	66
LGV	Commuting	2034	-5	-7	-10	35	60	103
LGV	Commuting	Total	-165	-215	-311	1079	1756	2890
LGV	Other	2019	-2	-2	-3	12	16	23
LGV	Other	2034	-2	-3	-4	12	21	35
LGV	Other	Total	-57	-74	-107	372	605	996
OGV1	Business	2019	-1	-1	-2	6	13	20
OGV1	Business	2034	-1	-2	-2	6	15	31
OGV1	Business	Total	-27	-64	-54	181	440	876
OGV1	Commuting	2019	-0	-0	-0	1	3	5
OGV1	Commuting	2034	-0	-1	-0	2	4	8
OGV1	Commuting	Total	-7	-16	-14	46	113	224
OGV1	Other	2019	1	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	2	4
OGV1	Other	Total	-3	-7	-6	21	50	100
OGV2	Business	2019	-1	-1	-2	5	13	21
OGV2	Business	2034	-1	-2	-2	6	14	31
OGV2	Business	Total	-34	-63	-56	178	423	890
OGV2	Commuting	2019	-0	-0	-0	1	2	4
OGV2	Commuting	2034	-0	-0	-0	1	2	5
OGV2	Commuting	Total	-6	-11	-10	31	73	155
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	3
OGV2	Other	Total	-3	-6	-6	18	42	89

Red Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-80	-169	-328	1060	2653	5074
Car	Business	2034	-70	-172	-248	825	2090	5628
Car	Business	Total	-2098	-4981	-7782	25673	64807	159281
Car	Commuting	2019	-129	-280	-582	2412	6666	16696
Car	Commuting	2034	-101	-246	-427	1633	4486	17137
Car	Commuting	Total	-3099	-7311	-13374	52466	144434	488397
Car	Other	2019	-233	-567	-1283	3018	4566	4575
Car	Other	2034	-220	-511	-947	2631	4368	5006
Car	Other	Total	-6416	-15054	-29592	78264	126733	140490
LGV	Business	2019	-131	-132	-227	809	1121	1589
LGV	Business	2034	-95	-134	-184	633	1081	1846
LGV	Business	Total	-3017	-3864	-5652	19659	31657	51679
LGV	Commuting	2019	-57	-57	-99	352	487	691
LGV	Commuting	2034	-39	-55	-75	259	442	756
LGV	Commuting	Total	-1244	-1588	-2328	8100	13015	21209
LGV	Other	2019	-18	-18	-31	110	153	216
LGV	Other	2034	-12	-17	-24	81	139	237
LGV	Other	Total	-390	-497	-729	2537	4077	6643
OGV1	Business	2019	-22	-36	-49	154	346	558
OGV1	Business	2034	-18	-47	-35	121	302	634
OGV1	Business	Total	-557	-1294	-1121	3753	9083	17844
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-29	-34	-50	147	345	568
OGV2	Business	2034	-23	-47	-37	120	286	644
OGV2	Business	Total	-704	-1266	-1169	3677	8735	18134
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-83	-170	-327	1059	2481	4994
Car	Business	2034	-72	-175	-251	830	2019	5554
Car	Business	Total	-2171	-5049	-7853	25761	62173	157192
Car	Commuting	2019	-134	-263	8	3811	6513	13709
Car	Commuting	2034	-104	-244	-14	2660	4406	14968
Car	Commuting	Total	-3191	-7156	-800	83277	141779	423201
Car	Other	2019	-237	-529	-846	3365	3051	3189
Car	Other	2034	-223	-519	-642	2993	3178	3840
Car	Other	Total	-6505	-14984	-20310	88152	91776	106898
LGV	Business	2019	-140	-134	-237	814	1110	1572
LGV	Business	2034	-100	-137	-189	637	1055	1813
LGV	Business	Total	-3178	-3953	-5835	19775	31056	50888
LGV	Commuting	2019	-57	-58	-100	355	492	696
LGV	Commuting	2034	-39	-55	-76	261	446	760
LGV	Commuting	Total	-1253	-1601	-2344	8175	13114	21341
LGV	Other	2019	-18	-18	-31	111	154	218
LGV	Other	2034	-12	-17	-24	82	140	238
LGV	Other	Total	-393	-502	-734	2562	4109	6686
OGV1	Business	2019	-25	-41	-58	172	385	616
OGV1	Business	2034	-21	-52	-39	131	325	681
OGV1	Business	Total	-627	-1426	-1272	4085	9835	19208
OGV1	Commuting	2019	-0	-0	-0	0	1	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-1	-2	-1	6	14	24
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-1	-1	3	6	10
OGV2	Business	2019	-37	-44	-64	184	421	685
OGV2	Business	2034	-28	-56	-44	140	334	742
OGV2	Business	Total	-860	-1524	-1409	4342	10241	20964
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Red Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-0	13	62	33	16	66	72	39
Car	Business	2034	-0	20	79	43	21	86	95	50
Car	Business	Total	-3	569	2310	1260	603	2501	2753	1465
Car	Commuting	2019	0	311	642	300	129	546	246	205
Car	Commuting	2034	-1	383	786	393	160	727	336	267
Car	Commuting	Total	-11	11294	23223	11434	4713	21094	9698	7793
Car	Other	2019	-13	77	322	111	60	212	242	56
Car	Other	2034	-14	149	421	162	84	327	342	71
Car	Other	Total	-421	4039	12264	4604	2399	9213	9801	2091
LGV	Business	2019	-0	12	29	11	5	19	24	11
LGV	Business	2034	-0	19	40	14	7	27	33	15
LGV	Business	Total	-14	523	1147	414	206	765	961	421
LGV	Commuting	2019	-0	13	33	12	6	22	28	12
LGV	Commuting	2034	-1	21	45	16	8	30	38	17
LGV	Commuting	Total	-16	596	1306	471	234	871	1094	479
LGV	Other	2019	-0	5	11	4	2	8	10	4
LGV	Other	2034	-0	7	16	6	3	10	13	6
LGV	Other	Total	-5	205	450	162	81	300	377	165
OGV1	Business	2019	-0	3	8	2	1	4	3	13
OGV1	Business	2034	-0	4	11	3	1	5	5	17
OGV1	Business	Total	-1	121	318	94	42	152	132	496
OGV1	Commuting	2019	-0	1	2	1	0	1	1	3
OGV1	Commuting	2034	-0	1	3	1	0	1	1	4
OGV1	Commuting	Total	-0	31	81	24	11	39	34	127
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	-0	0	1	0	0	1	1	2
OGV1	Other	Total	-0	14	36	11	5	17	15	57
OGV2	Business	2019	-0	3	8	2	1	4	3	13
OGV2	Business	2034	-0	5	11	3	1	5	4	16
OGV2	Business	Total	-1	131	320	90	41	150	128	479
OGV2	Commuting	2019	-0	1	1	0	0	1	1	2
OGV2	Commuting	2034	-0	1	2	1	0	1	1	3
OGV2	Commuting	Total	-0	23	55	16	7	26	22	83
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	-0	0	1	0	0	1	0	2
OGV2	Other	Total	-0	13	32	9	4	15	13	48

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-2	357	1679	896	446	1797	1973	1064
Car	Business	2034	-2	413	1617	887	421	1757	1935	1026
Car	Business	Total	-72	11582	47395	25820	12393	51282	56442	30059
Car	Commuting	2019	1	3239	6688	3126	1346	5687	2560	2136
Car	Commuting	2034	-4	2820	5792	2893	1178	5356	2476	1970
Car	Commuting	Total	-73	83922	172617	84665	35007	156033	71628	57713
Car	Other	2019	-124	727	3045	1046	565	2003	2286	529
Car	Other	2034	-92	997	2821	1083	559	2189	2291	478
Car	Other	Total	-2873	26645	82542	30798	16087	61456	65678	14090
LGV	Business	2019	-11	320	792	289	149	529	666	293
LGV	Business	2034	-9	382	814	293	144	543	682	298
LGV	Business	Total	-283	10635	23473	8472	4223	15657	19670	8615
LGV	Commuting	2019	-5	139	344	126	65	230	290	128
LGV	Commuting	2034	-4	156	333	120	59	222	279	122
LGV	Commuting	Total	-117	4363	9644	3482	1736	6433	8082	3540
LGV	Other	2019	-1	44	108	39	20	72	91	40
LGV	Other	2034	-1	49	104	38	18	70	87	38
LGV	Other	Total	-37	1367	3021	1090	544	2015	2531	1109
OGV1	Business	2019	-1	81	228	65	30	110	87	350
OGV1	Business	2034	-1	87	224	66	29	106	94	350
OGV1	Business	Total	-19	2480	6524	1916	857	3110	2687	10152
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-1	87	221	64	30	110	90	346

Red Route Option - 30 year

OGV2	Business	2034	-1	94	227	63	29	105	90	336
OGV2	Business	Total	-18	2679	6539	1839	850	3073	2616	9829
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-3	348	1678	896	449	1744	1832	1008
Car	Business	2034	-3	408	1618	888	422	1726	1853	991
Car	Business	Total	-81	11402	47407	25842	12451	50296	53782	28955
Car	Commuting	2019	6	3663	6736	2896	1398	4777	2031	2136
Car	Commuting	2034	-0	3119	5832	2725	1209	4762	2077	1950
Car	Commuting	Total	32	93019	173813	79629	35996	137563	59769	57290
Car	Other	2019	-128	838	2759	914	534	807	1789	481
Car	Other	2034	-92	1082	2622	974	542	1107	1948	444
Car	Other	Total	-2908	29171	76478	27635	15523	30884	55190	13054
LGV	Business	2019	-12	301	791	288	150	531	647	288
LGV	Business	2034	-10	371	815	293	145	532	648	285
LGV	Business	Total	-313	10276	23467	8474	4245	15452	18849	8302
LGV	Commuting	2019	-5	141	348	127	66	232	291	128
LGV	Commuting	2034	-4	158	337	121	60	224	280	122
LGV	Commuting	Total	-117	4417	9737	3512	1751	6472	8111	3549
LGV	Other	2019	-1	44	109	40	21	73	91	40
LGV	Other	2034	-1	50	105	38	19	70	88	38
LGV	Other	Total	-37	1384	3051	1101	549	2028	2541	1112
OGV1	Business	2019	-1	89	249	71	33	122	97	390
OGV1	Business	2034	-1	93	240	71	31	114	99	376
OGV1	Business	Total	-23	2668	7011	2056	918	3349	2851	10972
OGV1	Commuting	2019	-0	0	1	0	0	0	0	0
OGV1	Commuting	2034	-0	0	0	0	0	0	0	0
OGV1	Commuting	Total	-0	5	14	4	2	5	3	8
OGV1	Other	2019	-0	0	0	0	0	0	0	0
OGV1	Other	2034	-0	0	0	0	0	0	0	0
OGV1	Other	Total	-0	2	6	2	1	2	1	3
OGV2	Business	2019	-1	106	264	75	34	132	108	426
OGV2	Business	2034	-1	109	260	72	33	120	103	393
OGV2	Business	Total	-27	3120	7507	2088	961	3544	2997	11564
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	2019	2034
Road	3.82%	4.74%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus		
Travel Time	698677	698677	0		
Vehicle operating costs	-24094	-24094	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - COMMUTING BENEFITS	674583	674583	0		
Consumer - Other user benefits	All Modes	Road	Bus		
Travel Time	306065	306065	0		
Vehicle operating costs	-49292	-49292	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - OTHER BENEFITS	256772	256772	0		
Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	380478	325362	55116	0	0
Vehicle operating costs	-116	-6556	6440	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0

Red Route Option - 30 year

Subtotal	380362	318806	61555	0	0
Private Sector Provider Impacts					
Revenue	0		0	0	
Operating costs	0		0	0	
Investment costs	0		0	0	
Grant/subsidy	0		0	0	
Subtotal	0		0	0	
Other business Impacts					
Developer contributions	0		0	0	
NET BUSINESS IMPACT	380362				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1311717				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	35905	35905	0
Investment costs	599681	599681	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	635586	635586	0

Central Government Funding: Non-Transport

Indirect Tax Revenues	1492	1492	0
-----------------------	------	------	---

TOTALS

Broad Transport Budget	635586	635586	0
Wider Public Finances	1492	1492	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	44
Economic Efficiency: Consumer Users (Commuting)	674583
Economic Efficiency: Consumer Users (Other)	256772
Economic Efficiency: Business Users and Providers	380362
Wider Public Finances (Indirect Taxation Revenues)	-1492
Present Value of Benefits (PVB)	1310269
Broad Transport Budget	635586
Present Value of Costs (PVC)	635586
OVERALL IMPACTS	
Net Present Value (NPV)	674683
Benefit to Cost Ratio (BCR)	2.062

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary

- Scheme File : C:\Artitz\GOB\TUBA\Inputs\Parameter files\SCHEME_Red_V2 30.txt

Red Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\RED_30.OUT

Elapsed time :

Red Route Option - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 10:22:51

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
158675 Warnings found

Warning (213 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
149	168	2	Car	Other	All	2034	0.023	0.142	0.158	0.039	0.028
149	168	2	Car	Business	All	2034	0.023	0.142	0.158	0.001	0.001
149	168	2	Car	Commuting	All	2034	0.023	0.142	0.158	0.011	0.008
149	168	2	LGV	Business	All	2034	0.023	0.142	0.158	0.003	0.003
149	168	2	LGV	Commuting	All	2034	0.023	0.142	0.158	0.003	0.003

Displayed 5 warnings of a total of 6643 of this type.

Warning (203 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Business	All	2034	0.232	0.046	4.997	0.005	0.005
79	8	1	OGV2	Other	All	2034	0.232	0.046	4.997	0.005	0.005
79	8	1	OGV2	Commuting	All	2034	0.232	0.046	4.997	0.005	0.005

Red Route Option - 60 year

79	8	1	OGV1	Other	All	2034	0.231	0.046	4.980	0.005	0.005
79	8	1	OGV1	Commuting	All	2034	0.231	0.046	4.980	0.005	0.005

Displayed 5 warnings of a total of 124342 of this type.

Warning (998 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
148	149	1	Car	Business	All	2034	0.420	3.227	0.130	0.000	0.000
148	149	2	Car	Business	All	2019	0.420	3.227	0.130	0.001	0.001
148	149	2	Car	Business	All	2034	0.420	3.227	0.130	0.001	0.001
148	149	1	Car	Other	All	2019	0.420	3.227	0.130	0.018	0.014
148	149	1	Car	Business	All	2019	0.420	3.227	0.130	0.000	0.000

Displayed 5 warnings of a total of 23247 of this type.

Warning (3942 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
105	108	2	Car	Commuting	All	2034	1.173	0.258	4.547	0.044	0.017
105	108	1	Car	Commuting	All	2034	1.173	0.258	4.547	0.009	0.003
105	108	1	Car	Commuting	All	2019	1.173	0.258	4.547	0.005	0.005
105	108	1	Car	Commuting	All	2019	1.173	0.258	4.547	0.009	0.004
105	108	2	Car	Commuting	All	2019	1.173	0.258	4.547	0.045	0.020

Displayed 5 warnings of a total of 3942 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
6	37	2	Car	Other	All	2034	0.161	0.035	4.600	0.520
6	37	2	LGV	Business	All	2034	0.161	0.035	4.600	0.070
6	37	2	Car	Business	All	2034	0.161	0.035	4.600	0.079
6	37	2	Car	Commuting	All	2034	0.161	0.035	4.600	0.012
6	37	2	LGV	Commuting	All	2034	0.161	0.035	4.600	0.078

Displayed 5 warnings of a total of 48 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.023

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year 2009
pres_val_year 2009
GDP_base 120.60 0.00 0.00
av_ind_tax 19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year 2010
pres_val_year 2010
GDP_base 100.00 0.00 0.00
av_ind_tax 19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Red Route Option - 60 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Red Route Option - 60 year

```

VALUE_OF_TIME - (std)
* Pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

Red Route Option - 60 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Red Route Option - 60 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

Red Route Option - 60 year

2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

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2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Red Route Option - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Red Route Option - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Red Route Option - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Red Route Option - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Red Route Option - 60 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0

```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2010        2010     1           5.0      6.5
2011        2080     1           0.0      0.0
2010        2010     2           7.9     10.3
2011        2080     2           0.0      0.0
2010        2010     3           7.9     10.3
2011        2080     3           0.0      0.0
2010        2010     4           7.9     10.3
2011        2080     4           0.0      0.0
2010        2010     5           7.9     10.3
2011        2080     5           0.0      0.0
2010        2010     6           7.9     10.3
2011        2080     6           0.0      0.0
2010        2010     7           0.0      0.0
2011        2080     7           0.0      0.0

```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2011        2011     1          14.3      0.0
2011        2011     2          14.3      0.0
2011        2011     3          14.3      0.0
2011        2011     4          14.3      0.0
2011        2011     5          14.3      0.0
2011        2011     6          14.3      0.0
2011        2011     7           0.0      0.0
2011        2011     8           0.0      0.0
2012        2100     1           0.0      0.0
2012        2100     2           0.0      0.0
2012        2100     3           0.0      0.0
2012        2100     4           0.0      0.0
2012        2100     5           0.0      0.0
2012        2100     6           0.0      0.0
2012        2100     7           0.0      0.0
2012        2100     8           0.0      0.0

```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode purpose    Period1 Period2 Period3 Period4 Period5
1             1          12.0    10.3
1             2          42.9    42.2
1             3          45.1    47.5
2             1          40.2    50.3
2             2          45.1    35.1
2             3          14.7    14.6
3             1          75.6    81.3
3             2          17.0    11.1
3             3           7.4     7.6
4             1          79.7    86.9
4             2          13.2     7.8
4             3           7.1     5.3
5             1          10.2    10.2
5             2          18.9    18.9
5             3          70.8    70.8
6             1          10.2    10.2
6             2          18.9    18.9
6             3          70.8    70.8
7             1          10.2    10.2
7             2          18.9    18.9
7             3          70.8    70.8

```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode purpose    Period1 Period2 Period3 Period4 Period5
1             1          18.1    13.0    19.9    12.3    3.2

```

Red Route Option - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Red Route Option - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	601468	601468
Road	2020	0	1719	1719
Road	2021	0	1652	1652
Road	2022	0	1644	1644
Road	2023	0	1580	1580
Road	2024	0	1520	1520
Road	2025	0	1510	1510
Road	2026	0	1452	1452
Road	2027	0	1396	1396
Road	2028	0	1342	1342
Road	2029	0	1332	1332
Road	2030	0	1281	1281
Road	2031	0	1232	1232
Road	2032	0	1221	1221
Road	2033	0	1174	1174
Road	2034	0	1129	1129
Road	2035	0	1119	1119
Road	2036	0	1076	1076
Road	2037	0	1034	1034
Road	2038	0	1024	1024
Road	2039	0	984	984
Road	2040	0	947	947
Road	2041	0	936	936
Road	2042	0	900	900
Road	2043	0	890	890
Road	2044	0	855	855
Road	2045	0	823	823
Road	2046	0	812	812
Road	2047	0	781	781
Road	2048	0	751	751
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Red Route Option - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	635586	635586
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112213
Car	2019	All	113832	112213
Car	2034	AM Hour 8-9	127298	125611
Car	2034	All	127298	125611
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127539
All	2019	All	129159	127539
All	2034	AM Hour 8-9	144161	142473
All	2034	All	144161	142473

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	973032	0	4496	212154
Road	2034	820412	0	3541	128265	792292	0	3282	131264

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3441	1142
Car	2034	4630	1659	4281	1534
LGV	2019	85	480	80	452
LGV	2034	97	549	90	511
OGV1	2019	53	302	51	291
OGV1	2034	59	332	56	317
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3572	1885
All	2034	4785	2539	4427	2362
Car	Total	276503	98698	255872	91332
LGV	Total	5808	32910	5422	30724
OGV1	Total	3529	20000	3377	19135
OGV2	Total	0	0	0	0
All	Total	285839	151607	264670	141190

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2978	-223	86	80	-6	24	22	-2	24	22	-2
Car	2034	4095	3787	-308	127	118	-10	17	16	-1	17	16	-1
LGV	2019	397	375	-23	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	423	-31	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	241	-9	7	6	-0	2	2	-0	2	2	-0
OGV1	2034	275	263	-12	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3594	-255	104	97	-7	29	27	-2	29	27	-2
All	2020	3953	3689	-264	108	100	-7	29	27	-2	29	27	-2
All	2021	4061	3787	-273	112	104	-8	28	26	-2	28	26	-2
All	2022	4171	3888	-283	116	108	-8	28	26	-2	28	26	-2

Red Route Option - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3594	-255	104	97	-7	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4473	-351	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	267354	-20755	10560	9797	-762	815	757	-58	815	757	-58

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

Red Route Option - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_pri	Fuel	Non_fuel	PT_fares_pri	Taxes
Road	2019	49725	0	407	-3620	0	-66
Road	2020	49911	0	409	-3577	0	-66
Road	2021	49867	0	411	-3533	0	-66
Road	2022	49800	0	413	-3486	0	-67
Road	2023	49711	0	414	-3438	0	-67
Road	2024	49603	0	416	-3388	0	-68
Road	2025	49476	0	410	-3337	0	-65
Road	2026	49330	0	404	-3285	0	-63
Road	2027	49166	0	398	-3232	0	-61
Road	2028	48986	0	392	-3178	0	-59
Road	2029	48790	0	385	-3124	0	-57
Road	2030	48579	0	379	-3069	0	-55
Road	2031	48354	0	371	-3014	0	-53
Road	2032	48115	0	363	-2958	0	-51
Road	2033	47864	0	355	-2902	0	-49
Road	2034	47600	0	347	-2846	0	-48
Road	2035	46552	0	334	-2737	0	-46
Road	2036	45527	0	321	-2632	0	-44
Road	2037	44525	0	308	-2530	0	-42
Road	2038	43545	0	297	-2433	0	-41
Road	2039	42587	0	285	-2340	0	-39
Road	2040	41650	0	274	-2250	0	-38
Road	2041	40734	0	264	-2163	0	-36
Road	2042	39838	0	254	-2080	0	-35
Road	2043	38961	0	244	-2000	0	-34
Road	2044	38105	0	234	-1923	0	-32
Road	2045	37267	0	225	-1849	0	-31
Road	2046	36447	0	217	-1778	0	-30
Road	2047	35646	0	208	-1709	0	-29
Road	2048	34863	0	200	-1644	0	-28
Road	2049	34097	0	193	-1580	0	-26
Road	2050	33347	0	185	-1520	0	-25
Road	2051	32615	0	178	-1461	0	-24
Road	2052	31898	0	171	-1405	0	-24
Road	2053	31198	0	165	-1351	0	-23
Road	2054	30513	0	158	-1299	0	-22
Road	2055	29843	0	152	-1249	0	-21
Road	2056	29188	0	146	-1201	0	-20
Road	2057	28547	0	141	-1155	0	-19
Road	2058	27920	0	135	-1110	0	-19
Road	2059	27308	0	130	-1068	0	-18
Road	2060	26708	0	125	-1027	0	-17
Road	2061	26122	0	120	-987	0	-17
Road	2062	25549	0	116	-949	0	-16
Road	2063	24989	0	111	-913	0	-15
Road	2064	24441	0	107	-878	0	-15
Road	2065	23905	0	103	-844	0	-14
Road	2066	23381	0	99	-811	0	-14
Road	2067	22869	0	95	-780	0	-13
Road	2068	22368	0	91	-750	0	-13
Road	2069	21877	0	88	-721	0	-12
Road	2070	21398	0	85	-694	0	-12
Road	2071	20929	0	81	-667	0	-11
Road	2072	20471	0	78	-641	0	-11
Road	2073	20023	0	75	-617	0	-10
Road	2074	19584	0	72	-593	0	-10
Road	2075	19155	0	69	-570	0	-10
Road	2076	18736	0	67	-548	0	-9
Road	2077	18326	0	64	-527	0	-9
Road	2078	17925	0	62	-507	0	-8
Road	2079	18234	0	62	-507	0	-8
Road	Total	2124588	0	13466	-110984	0	-1950

Red Route Option - 60 year

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	43069	0	372	-3853	0	-48
Car	2034	40862	0	319	-2979	0	-35
LGV	2019	4757	0	25	-55	0	-12
LGV	2034	4839	0	20	-76	0	-9
OGV1	2019	951	0	10	91	0	-5
OGV1	2034	956	0	8	63	0	-4
OGV2	2019	947	0	0	197	0	0
OGV2	2034	943	0	0	145	0	0
All	2019	49725	0	407	-3620	0	-66
All	2034	47600	0	347	-2846	0	-48
Car	Total	1819765	0	12378	-116579	0	-1439
LGV	Total	217714	0	781	-2668	0	-368
OGV1	Total	43812	0	307	2524	0	-143
OGV2	Total	43299	0	0	5739	0	0
All	Total	2124589	0	13466	-110984	0	-1950

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2019	49725	0	407	-3620	0	-66
All	2034	47600	0	347	-2846	0	-48
All	Total	2124589	0	13466	-110984	0	-1950

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2019	13137	0	45	-53	0	-20
Business	2034	13100	0	38	-41	0	-15
Commuting	2019	26099	0	271	-1397	0	-83
Commuting	2034	23770	0	225	-1023	0	-66
Other	2019	10488	0	91	-2169	0	37
Other	2034	10731	0	85	-1782	0	33
Business	Total	601136	0	1470	-1622	0	-604
Commuting	Total	1056054	0	8773	-40540	0	-2597
Other	Total	467399	0	3223	-68822	0	1251

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM Hour 8-9	2019	49725	0	407	-3620	0	-66
AM Hour 8-9	2034	47600	0	347	-2846	0	-48
AM Hour 8-9	Total	2124589	0	13466	-110984	0	-1950

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-3	-6	-12	39	97	186
Car	Business	2034	-3	-8	-12	40	102	275
Car	Business	Total	-204	-496	-738	2447	6189	16059
Car	Commuting	2019	-12	-27	-56	232	640	1603
Car	Commuting	2034	-14	-33	-58	222	609	2327
Car	Commuting	Total	-826	-1988	-3521	13602	37400	136135
Car	Other	2019	-25	-60	-136	319	482	483
Car	Other	2034	-33	-76	-141	393	652	748
Car	Other	Total	-1942	-4521	-8581	23374	38437	43493
LGV	Business	2019	-5	-5	-8	30	41	58
LGV	Business	2034	-5	-7	-9	31	53	90
LGV	Business	Total	-284	-385	-542	1875	3126	5244
LGV	Commuting	2019	-5	-5	-9	34	47	66
LGV	Commuting	2034	-5	-7	-10	35	60	103
LGV	Commuting	Total	-323	-438	-617	2134	3558	5968
LGV	Other	2019	-2	-2	-3	12	16	23
LGV	Other	2034	-2	-3	-4	12	21	35
LGV	Other	Total	-111	-151	-213	735	1226	2056
OGV1	Business	2019	-1	-1	-2	6	13	20
OGV1	Business	2034	-1	-2	-2	6	15	31
OGV1	Business	Total	-54	-133	-105	358	882	1805
OGV1	Commuting	2019	-0	-0	-0	1	3	5

Red Route Option - 60 year

OGV1	Commuting	2034	-0	-1	-0	2	4	8
OGV1	Commuting	Total	-14	-34	-27	92	226	462
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	2	4
OGV1	Other	Total	-6	-15	-12	41	101	206
OGV2	Business	2019	-1	-1	-2	5	13	21
OGV2	Business	2034	-1	-2	-2	6	14	31
OGV2	Business	Total	-67	-131	-110	353	842	1834
OGV2	Commuting	2019	-0	-0	-0	1	2	4
OGV2	Commuting	2034	-0	-0	-0	1	2	5
OGV2	Commuting	Total	-12	-23	-19	61	146	318
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	3
OGV2	Other	Total	-7	-13	-11	35	84	184

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-80	-169	-328	1060	2653	5074
Car	Business	2034	-70	-172	-248	825	2090	5628
Car	Business	Total	-3272	-7885	-11957	39568	100013	254089
Car	Commuting	2019	-129	-280	-582	2412	6666	16696
Car	Commuting	2034	-101	-246	-427	1633	4486	17137
Car	Commuting	Total	-4619	-11016	-19796	77017	211881	746050
Car	Other	2019	-233	-567	-1283	3018	4566	4575
Car	Other	2034	-220	-511	-947	2631	4368	5006
Car	Other	Total	-9730	-22731	-43831	117816	192411	215756
LGV	Business	2019	-131	-132	-227	809	1121	1589
LGV	Business	2034	-95	-134	-184	633	1081	1846
LGV	Business	Total	-4612	-6116	-8746	30317	49858	82766
LGV	Commuting	2019	-57	-57	-99	352	487	691
LGV	Commuting	2034	-39	-55	-75	259	442	756
LGV	Commuting	Total	-1827	-2411	-3459	11996	19667	32571
LGV	Other	2019	-18	-18	-31	110	153	216
LGV	Other	2034	-12	-17	-24	81	139	237
LGV	Other	Total	-572	-755	-1083	3757	6160	10202
OGV1	Business	2019	-22	-36	-49	154	346	558
OGV1	Business	2034	-18	-47	-35	121	302	634
OGV1	Business	Total	-866	-2091	-1711	5790	14163	28527
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-29	-34	-50	147	345	568
OGV2	Business	2034	-23	-47	-37	120	286	644
OGV2	Business	Total	-1087	-2055	-1790	5693	13554	28984
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-83	-170	-327	1059	2481	4994
Car	Business	2034	-72	-175	-251	830	2019	5554
Car	Business	Total	-3367	-7980	-12061	39701	96698	251280
Car	Commuting	2019	-134	-263	8	3811	6513	13709
Car	Commuting	2034	-104	-244	-14	2660	4406	14968
Car	Commuting	Total	-4735	-10842	-3250	117695	208461	660012
Car	Other	2019	-237	-529	-846	3365	3051	3189
Car	Other	2034	-223	-519	-642	2993	3178	3840
Car	Other	Total	-9849	-22745	-31618	131184	146018	170963
LGV	Business	2019	-140	-134	-237	814	1110	1572
LGV	Business	2034	-100	-137	-189	637	1055	1813
LGV	Business	Total	-4820	-6237	-8984	30471	49014	81665
LGV	Commuting	2019	-57	-58	-100	355	492	696
LGV	Commuting	2034	-39	-55	-76	261	446	760
LGV	Commuting	Total	-1839	-2428	-3480	12093	19798	32747
LGV	Other	2019	-18	-18	-31	111	154	218
LGV	Other	2034	-12	-17	-24	82	140	238
LGV	Other	Total	-576	-761	-1090	3789	6203	10259

Red Route Option - 60 year

OGV1	Business	2019	-25	-41	-58	172	385	616
OGV1	Business	2034	-21	-52	-39	131	325	681
OGV1	Business	Total	-957	-2272	-1905	6220	15142	30338
OGV1	Commuting	2019	-0	-0	-0	0	1	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-1	-3	-2	8	19	32
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-1	-1	-1	4	8	14
OGV2	Business	2019	-37	-44	-64	184	421	685
OGV2	Business	2034	-28	-56	-44	140	334	742
OGV2	Business	Total	-1290	-2401	-2098	6552	15520	32755
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-0	13	62	33	16	66	72	39
Car	Business	2034	-0	20	79	43	21	86	95	50
Car	Business	Total	-7	1175	4679	2560	1219	5075	5588	2968
Car	Commuting	2019	0	311	642	300	129	546	246	205
Car	Commuting	2034	-1	383	786	393	160	727	336	267
Car	Commuting	Total	-27	22781	46813	23217	9510	42909	19782	15817
Car	Other	2019	-13	77	322	111	60	212	242	56
Car	Other	2034	-14	149	421	162	84	327	342	71
Car	Other	Total	-833	8505	24905	9456	4906	19023	20065	4234
LGV	Business	2019	-0	12	29	11	5	19	24	11
LGV	Business	2034	-0	19	40	14	7	27	33	15
LGV	Business	Total	-28	1083	2341	843	417	1561	1960	858
LGV	Commuting	2019	-0	13	33	12	6	22	28	12
LGV	Commuting	2034	-1	21	45	16	8	30	38	17
LGV	Commuting	Total	-31	1233	2664	960	475	1776	2231	976
LGV	Other	2019	-0	5	11	4	2	8	10	4
LGV	Other	2034	-0	7	16	6	3	10	13	6
LGV	Other	Total	-11	425	918	331	164	612	769	336
OGV1	Business	2019	-0	3	8	2	1	4	3	13
OGV1	Business	2034	-0	4	11	3	1	5	5	17
OGV1	Business	Total	-2	249	646	191	85	307	270	1008
OGV1	Commuting	2019	-0	1	2	1	0	1	1	3
OGV1	Commuting	2034	-0	1	3	1	0	1	1	4
OGV1	Commuting	Total	-0	64	165	49	22	79	69	258
OGV1	Other	2019	-0	0	1	0	0	0	0	1
OGV1	Other	2034	-0	0	1	0	0	1	1	2
OGV1	Other	Total	-0	28	74	22	10	35	31	115
OGV2	Business	2019	-0	3	8	2	1	4	3	13
OGV2	Business	2034	-0	5	11	3	1	5	4	16
OGV2	Business	Total	-2	269	652	182	84	303	260	972
OGV2	Commuting	2019	-0	1	1	0	0	1	1	2
OGV2	Commuting	2034	-0	1	2	1	0	1	1	3
OGV2	Commuting	Total	-0	47	113	32	15	53	45	169
OGV2	Other	2019	-0	0	1	0	0	0	0	1
OGV2	Other	2034	-0	0	1	0	0	1	0	2
OGV2	Other	Total	-0	27	65	18	8	30	26	97

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-2	357	1679	896	446	1797	1973	1064
Car	Business	2034	-2	413	1617	887	421	1757	1935	1026
Car	Business	Total	-113	18543	74635	40767	19476	80870	89038	47343
Car	Commuting	2019	1	3239	6688	3126	1346	5687	2560	2136
Car	Commuting	2034	-4	2820	5792	2893	1178	5356	2476	1970
Car	Commuting	Total	-131	126324	259696	128159	52718	236562	108853	87334
Car	Other	2019	-124	727	3045	1046	565	2003	2286	529
Car	Other	2034	-92	997	2821	1083	559	2189	2291	478
Car	Other	Total	-4256	41634	124959	47079	24499	94375	100120	21282
LGV	Business	2019	-11	320	792	289	149	529	666	293
LGV	Business	2034	-9	382	814	293	144	543	682	298
LGV	Business	Total	-442	17072	37190	13407	6652	24803	31151	13635
LGV	Commuting	2019	-5	139	344	126	65	230	290	128
LGV	Commuting	2034	-4	156	333	120	59	222	279	122

Red Route Option - 60 year

LGV	Commuting	Total	-175	6716	14658	5285	2624	9776	12278	5375
LGV	Other	2019	-1	44	108	39	20	72	91	40
LGV	Other	2034	-1	49	104	38	18	70	87	38
LGV	Other	Total	-55	2104	4591	1655	822	3062	3846	1683
OGV1	Business	2019	-1	81	228	65	30	110	87	350
OGV1	Business	2034	-1	87	224	66	29	106	94	350
OGV1	Business	Total	-27	3942	10295	3034	1352	4897	4277	16042
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-1	87	221	64	30	110	90	346
OGV2	Business	2034	-1	94	227	63	29	105	90	336
OGV2	Business	Total	-27	4265	10358	2903	1342	4834	4132	15492
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	-3	348	1678	896	449	1744	1832	1008
Car	Business	2034	-3	408	1618	888	422	1726	1853	991
Car	Business	Total	-126	18308	74657	40798	19554	79593	85586	45901
Car	Commuting	2019	6	3663	6736	2896	1398	4777	2031	2136
Car	Commuting	2034	-0	3119	5832	2725	1209	4762	2077	1950
Car	Commuting	Total	6	138293	261277	121506	54000	212384	93159	86715
Car	Other	2019	-128	838	2759	914	534	807	1789	481
Car	Other	2034	-92	1082	2622	974	542	1107	1948	444
Car	Other	Total	-4296	44979	116978	42865	23769	53406	86335	19918
LGV	Business	2019	-12	301	791	288	150	531	647	288
LGV	Business	2034	-10	371	815	293	145	532	648	285
LGV	Business	Total	-480	16607	37187	13411	6681	24497	30010	13196
LGV	Commuting	2019	-5	141	348	127	66	232	291	128
LGV	Commuting	2034	-4	158	337	121	60	224	280	122
LGV	Commuting	Total	-175	6788	14781	5326	2643	9827	12316	5386
LGV	Other	2019	-1	44	109	40	21	73	91	40
LGV	Other	2034	-1	50	105	38	19	70	88	38
LGV	Other	Total	-55	2127	4631	1669	828	3079	3858	1687
OGV1	Business	2019	-1	89	249	71	33	122	97	390
OGV1	Business	2034	-1	93	240	71	31	114	99	376
OGV1	Business	Total	-33	4193	10940	3220	1433	5211	4487	17117
OGV1	Commuting	2019	-0	0	1	0	0	0	0	0
OGV1	Commuting	2034	-0	0	0	0	0	0	0	0
OGV1	Commuting	Total	-0	7	18	5	2	6	4	10
OGV1	Other	2019	-0	0	0	0	0	0	0	0
OGV1	Other	2034	-0	0	0	0	0	0	0	0
OGV1	Other	Total	-0	3	8	2	1	3	2	5
OGV2	Business	2019	-1	106	264	75	34	132	108	426
OGV2	Business	2034	-1	109	260	72	33	120	103	393
OGV2	Business	Total	-38	4849	11641	3232	1488	5453	4634	17777
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	3.82%	4.74%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	1056054	1056054	0
Vehicle operating costs	-31767	-31767	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

Red Route Option - 60 year

NET CONSUMER - COMMUTING BENEFITS	1024287	1024287	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	467399	467399	0
Vehicle operating costs	-65599	-65599	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	401800	401800	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	601136	514025	87111	0	0
Vehicle operating costs	-151	-8645	8494	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	600984	505380	95605	0	0

Private Sector Provider Impacts			
Revenue	0	0	0
Operating costs	0	0	0
Investment costs	0	0	0
Grant/subsidy	0	0	0
Subtotal	0	0	0

Other business Impacts			
Developer contributions	0	0	0
NET BUSINESS IMPACT	600984		

TOTAL
 Present Value of Transport Economic
 Efficiency Benefits (TEE) 2027071

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	35905	35905	0
Investment costs	599681	599681	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	635586	635586	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	1950	1950	0

TOTALS			
Broad Transport Budget	635586	635586	0
Wider Public Finances	1950	1950	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	58
Economic Efficiency: Consumer Users (Commuting)	1024287
Economic Efficiency: Consumer Users (Other)	401800
Economic Efficiency: Business Users and Providers	600984
Wider Public Finances (Indirect Taxation Revenues)	-1950
Present Value of Benefits (PVB)	2025179
Broad Transport Budget	635586
Present Value of Costs (PVC)	635586

OVERALL IMPACTS

Red Route Option - 60 year

Net Present Value (NPV)	1389593
Benefit to Cost Ratio (BCR)	3.186

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Red_V2 60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\RED_60.OUT

Elapsed time :

Yellow Route Option - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
 Program run on Fri Aug 28, 2015 at 10:41:22

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
 Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
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 Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
 133431 Warnings found

Warning (48 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
127	126	1	Car	Business	All	2034	0.052	0.172	0.299	0.005	0.002
127	126	1	LGV	Business	All	2034	0.052	0.172	0.299	0.044	0.044
127	126	1	LGV	Commuting	All	2034	0.052	0.172	0.299	0.044	0.044
127	126	1	Car	Other	All	2034	0.052	0.172	0.299	0.020	0.007
127	126	1	Car	Commuting	All	2034	0.052	0.172	0.299	0.014	0.007

Displayed 5 warnings of a total of 4961 of this type.

Warning (123 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
79	8	1	OGV2	Other	All	2019	0.227	0.048	4.780	0.004	0.004
79	8	1	OGV2	Commuting	All	2019	0.227	0.048	4.780	0.004	0.004
79	8	1	OGV2	Business	All	2019	0.227	0.048	4.780	0.004	0.004

Yellow Route Option - 30 year

79	8	1	OGV1	Other	All	2019	0.226	0.048	4.755	0.004	0.004
79	8	1	OGV1	Commuting	All	2019	0.226	0.048	4.755	0.004	0.004

Displayed 5 warnings of a total of 92690 of this type.

Warning (173 serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
127	126	1	LGV	Business	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	LGV	Commuting	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	LGV	Other	All	2019	0.776	3.051	0.254	0.042	0.042
127	126	1	Car	Commuting	All	2034	0.776	3.050	0.254	0.014	0.007
127	126	2	Car	Commuting	All	2034	0.776	3.050	0.254	0.001	0.000

Displayed 5 warnings of a total of 31360 of this type.

Warning (3906 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.350	4.064	0.025	0.030
73	8	1	Car	Business	All	2019	5.334	1.350	3.951	0.024	0.031
73	8	1	Car	Other	All	2034	5.299	1.350	3.925	0.048	0.075
73	8	1	LGV	Commuting	All	2034	5.124	1.350	3.796	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.350	3.796	0.021	0.021

Displayed 5 warnings of a total of 3906 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
10	6	2	Car	Commuting	All	2034	0.265	0.056	4.766	0.091
10	6	2	Car	Other	All	2034	0.265	0.056	4.766	1.349
10	6	2	Car	Business	All	2034	0.265	0.056	4.766	0.933
10	6	2	LGV	Business	All	2034	0.265	0.056	4.766	0.734
10	6	2	Car	Commuting	All	2034	0.265	0.056	4.766	0.417

Displayed 5 warnings of a total of 61 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.026

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year 2009
pres_val_year 2009
GDP_base 120.60 0.00 0.00
av_ind_tax 19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year 2010
pres_val_year 2010
GDP_base 100.00 0.00 0.00
av_ind_tax 19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

Yellow Route Option - 30 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

Yellow Route Option - 30 year

```

VALUE_OF_TIME - (std)
* Pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2025 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
* % change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

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Yellow Route Option - 30 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

Yellow Route Option - 30 year

5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

Yellow Route Option - 30 year

2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

Yellow Route Option - 30 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

Yellow Route Option - 30 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

Yellow Route Option - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

Yellow Route Option - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

Yellow Route Option - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

Yellow Route Option - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2010        2010     1           5.0      6.5
2011        2080     1           0.0      0.0
2010        2010     2           7.9      10.3
2011        2080     2           0.0      0.0
2010        2010     3           7.9      10.3
2011        2080     3           0.0      0.0
2010        2010     4           7.9      10.3
2011        2080     4           0.0      0.0
2010        2010     5           7.9      10.3
2011        2080     5           0.0      0.0
2010        2010     6           7.9      10.3
2011        2080     6           0.0      0.0
2010        2010     7           0.0      0.0
2011        2080     7           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode    final    intermediate
2011        2011     1          14.3      0.0
2011        2011     2          14.3      0.0
2011        2011     3          14.3      0.0
2011        2011     4          14.3      0.0
2011        2011     5          14.3      0.0
2011        2011     6          14.3      0.0
2011        2011     7           0.0      0.0
2011        2011     8           0.0      0.0
2012        2100     1           0.0      0.0
2012        2100     2           0.0      0.0
2012        2100     3           0.0      0.0
2012        2100     4           0.0      0.0
2012        2100     5           0.0      0.0
2012        2100     6           0.0      0.0
2012        2100     7           0.0      0.0
2012        2100     8           0.0      0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1         12.0     10.3
1               2         42.9     42.2
1               3         45.1     47.5
2               1         40.2     50.3
2               2         45.1     35.1
2               3         14.7     14.6
3               1         75.6     81.3
3               2         17.0     11.1
3               3          7.4      7.6
4               1         79.7     86.9
4               2         13.2     7.8
4               3          7.1      5.3
5               1         10.2     10.2
5               2         18.9     18.9
5               3         70.8     70.8
6               1         10.2     10.2
6               2         18.9     18.9
6               3         70.8     70.8
7               1         10.2     10.2
7               2         18.9     18.9
7               3         70.8     70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1         18.1     13.0     19.9     12.3     3.2
    
```

Yellow Route Option - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.70	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

Yellow Route Option - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	364590	364590
Road	2020	0	809	809
Road	2021	0	778	778
Road	2022	0	774	774
Road	2023	0	744	744
Road	2024	0	715	715
Road	2025	0	711	711
Road	2026	0	684	684
Road	2027	0	657	657
Road	2028	0	632	632
Road	2029	0	627	627
Road	2030	0	603	603
Road	2031	0	580	580
Road	2032	0	575	575
Road	2033	0	553	553
Road	2034	0	532	532
Road	2035	0	527	527
Road	2036	0	506	506
Road	2037	0	487	487
Road	2038	0	482	482
Road	2039	0	463	463
Road	2040	0	446	446
Road	2041	0	441	441
Road	2042	0	424	424
Road	2043	0	419	419
Road	2044	0	403	403
Road	2045	0	387	387
Road	2046	0	382	382
Road	2047	0	368	368
Road	2048	0	354	354
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

Yellow Route Option - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	380653	380653
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	112533
Car	2019	All	113832	112533
Car	2034	AM Hour 8-9	127298	125746
Car	2034	All	127298	125746
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127860
All	2019	All	129159	127860
All	2034	AM Hour 8-9	144161	142608
All	2034	All	144161	142608

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	Dmtot_time	Dmtot_charge	Dmtot_fuel	Dmtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	981015	0	4574	210831
Road	2034	820412	0	3541	128265	798242	0	3334	130394

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3497	1160
Car	2034	4630	1659	4344	1556
LGV	2019	85	480	82	465
LGV	2034	97	549	93	524
OGV1	2019	53	302	52	297
OGV1	2034	59	332	57	323
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3632	1922
All	2034	4785	2539	4494	2404
Car	Total	137617	48941	129359	46002
LGV	Total	2904	16455	2785	15780
OGV1	Total	1773	10047	1729	9800
OGV2	Total	0	0	0	0
All	Total	142294	75442	133873	71582

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	3027	-174	86	82	-5	24	23	-1	24	23	-1
Car	2034	4095	3842	-252	127	120	-8	17	16	-1	17	16	-1
LGV	2019	397	385	-13	11	10	-0	3	3	-0	3	3	-0
LGV	2034	454	434	-20	14	14	-1	2	2	-0	2	2	-0
OGV1	2019	250	245	-5	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	267	-7	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3657	-192	104	99	-5	29	27	-1	29	27	-1
All	2020	3953	3754	-199	108	102	-5	29	27	-1	29	27	-1
All	2021	4061	3853	-208	112	106	-6	28	27	-1	28	27	-1
All	2022	4171	3955	-216	116	110	-6	28	26	-1	28	26	-1

Yellow Route Option - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3657	-192	104	99	-5	29	27	-1	29	27	-1
AM Hour 8-9	2034	4824	4544	-280	150	141	-9	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	135350	-8053	4499	4246	-253	622	588	-34	622	588	-34

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	33313	0	287	-2352	0	-63
Road	2020	33586	0	290	-2342	0	-63
Road	2021	33698	0	293	-2330	0	-63
Road	2022	33788	0	295	-2315	0	-64
Road	2023	33859	0	298	-2298	0	-64
Road	2024	33910	0	300	-2278	0	-64
Road	2025	33943	0	297	-2257	0	-63
Road	2026	33958	0	293	-2234	0	-61
Road	2027	33955	0	290	-2210	0	-59
Road	2028	33937	0	286	-2184	0	-57
Road	2029	33903	0	283	-2156	0	-56
Road	2030	33854	0	279	-2128	0	-54
Road	2031	33791	0	274	-2099	0	-52
Road	2032	33714	0	268	-2068	0	-51
Road	2033	33625	0	263	-2037	0	-49
Road	2034	33523	0	258	-2006	0	-48
Road	2035	32783	0	248	-1929	0	-46
Road	2036	32059	0	238	-1854	0	-44
Road	2037	31351	0	229	-1783	0	-42
Road	2038	30658	0	220	-1714	0	-41
Road	2039	29982	0	212	-1649	0	-39
Road	2040	29320	0	204	-1585	0	-38
Road	2041	28672	0	196	-1524	0	-36
Road	2042	28040	0	188	-1466	0	-35
Road	2043	27421	0	181	-1409	0	-34
Road	2044	26816	0	174	-1355	0	-32
Road	2045	26224	0	168	-1303	0	-31
Road	2046	25646	0	161	-1253	0	-30
Road	2047	25080	0	155	-1205	0	-29
Road	2048	24527	0	149	-1158	0	-28
Road	2049	23986	0	143	-1114	0	-27
Road	Total	962922	0	7421	-57594	0	-1462

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	29632	0	268	-2473	0	-53
Car	2034	29300	0	240	-2074	0	-40
LGV	2019	2683	0	14	-22	0	-7
LGV	2034	3067	0	13	-50	0	-6
OGV1	2019	507	0	5	45	0	-2
OGV1	2034	586	0	5	36	0	-2
OGV2	2019	491	0	0	98	0	0
OGV2	2034	570	0	0	82	0	0
All	2019	33313	0	287	-2352	0	-63

Yellow Route Option - 30 year

All	2034	33523	0	258	-2006	0	-48
Car	Total	844687	0	6924	-59828	0	-1228
LGV	Total	85848	0	365	-1189	0	-172
OGV1	Total	16430	0	132	1046	0	-62
OGV2	Total	15957	0	0	2377	0	0
All	Total	962922	0	7421	-57594	0	-1462

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	33313	0	287	-2352	-63
All	2034	33523	0	258	-2006	-48
All	Total	962922	0	7421	-57594	-1462

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	7838	0	27	-113	-12
Business	2034	8598	0	26	-100	-11
Commuting	2019	19434	0	207	-995	-67
Commuting	2034	17959	0	175	-841	-50
Other	2019	6041	0	53	-1244	17
Other	2034	6966	0	57	-1065	13
Business	Total	243961	0	733	-2844	-311
Commuting	Total	525815	0	5130	-24201	-1532
Other	Total	193145	0	1558	-30549	380

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	33313	0	287	-2352	-63
AM Hour 8-9	2034	33523	0	258	-2006	-48
AM Hour 8-9	Total	962922	0	7421	-57594	-1462

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-6	-10	-15	40	58	122
Car	Business	2034	-4	-9	-13	52	73	167
Car	Business	Total	-134	-293	-415	1508	2144	4816
Car	Commuting	2019	-21	-40	-61	243	556	1118
Car	Commuting	2034	-13	-34	-57	280	657	1495
Car	Commuting	Total	-476	-1097	-1799	8381	19552	43325
Car	Other	2019	-37	-60	-125	258	270	307
Car	Other	2034	-21	-59	-93	395	359	421
Car	Other	Total	-771	-1843	-3146	11157	10416	12147
LGV	Business	2019	-7	-7	-10	25	28	34
LGV	Business	2034	-5	-7	-7	34	35	48
LGV	Business	Total	-166	-217	-248	974	1020	1380
LGV	Commuting	2019	-8	-8	-11	28	31	38
LGV	Commuting	2034	-6	-8	-8	38	40	55
LGV	Commuting	Total	-189	-247	-283	1109	1161	1571
LGV	Other	2019	-3	-3	-4	10	11	13
LGV	Other	2034	-2	-3	-3	13	14	19
LGV	Other	Total	-65	-85	-97	382	400	541
OGV1	Business	2019	-2	-3	-2	6	8	12
OGV1	Business	2034	-2	-3	-2	8	10	17
OGV1	Business	Total	-52	-81	-70	218	307	485
OGV1	Commuting	2019	-0	-1	-1	1	2	3
OGV1	Commuting	2034	-0	-1	-1	2	3	4
OGV1	Commuting	Total	-13	-21	-18	56	79	124
OGV1	Other	2019	1	-0	-0	1	1	1
OGV1	Other	2034	-0	-0	-0	1	1	2
OGV1	Other	Total	-6	-9	-8	25	35	55
OGV2	Business	2019	-2	-2	-3	6	8	12
OGV2	Business	2034	-2	-3	-2	7	10	16
OGV2	Business	Total	-54	-78	-74	216	302	472
OGV2	Commuting	2019	-0	-0	-0	1	1	2
OGV2	Commuting	2034	-0	-0	-0	1	2	3
OGV2	Commuting	Total	-9	-14	-13	38	52	82
OGV2	Other	2019	-0	-0	-0	1	1	1
OGV2	Other	2034	-0	-0	-0	1	1	2
OGV2	Other	Total	-5	-8	-7	22	30	47

Yellow Route Option - 30 year

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-169	-272	-417	1085	1591	3315
Car	Business	2034	-75	-190	-261	1059	1493	3421
Car	Business	Total	-2867	-6121	-8716	30918	44059	98516
Car	Commuting	2019	-216	-420	-632	2531	5788	11639
Car	Commuting	2034	-99	-248	-421	2061	4837	11011
Car	Commuting	Total	-3689	-8356	-13591	62525	145635	320398
Car	Other	2019	-346	-564	-1186	2443	2558	2904
Car	Other	2034	-139	-398	-624	2647	2403	2822
Car	Other	Total	-5493	-12610	-21961	74454	70049	81536
LGV	Business	2019	-180	-201	-262	676	753	922
LGV	Business	2034	-101	-141	-153	691	711	988
LGV	Business	Total	-3515	-4536	-5232	19937	20949	28182
LGV	Commuting	2019	-78	-88	-114	294	328	401
LGV	Commuting	2034	-41	-58	-62	283	291	404
LGV	Commuting	Total	-1454	-1871	-2163	8192	8615	11575
LGV	Other	2019	-24	-27	-36	92	103	126
LGV	Other	2034	-13	-18	-20	89	91	127
LGV	Other	Total	-455	-586	-678	2566	2698	3625
OGV1	Business	2019	-51	-72	-67	150	230	317
OGV1	Business	2034	-32	-54	-45	155	214	349
OGV1	Business	Total	-1082	-1689	-1469	4456	6319	9896
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-51	-66	-76	155	214	316
OGV2	Business	2034	-35	-53	-46	152	213	338
OGV2	Business	Total	-1131	-1624	-1547	4433	6189	9638
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-172	-274	-422	1014	1515	3256
Car	Business	2034	-77	-191	-263	1014	1440	3374
Car	Business	Total	-2932	-6150	-8804	29509	42437	97141
Car	Commuting	2019	-209	-356	-69	3594	5870	9066
Car	Commuting	2034	-97	-222	-53	2930	4869	9042
Car	Commuting	Total	-3592	-7392	-2146	87790	146875	262128
Car	Other	2019	-331	-511	-814	2611	1778	1882
Car	Other	2034	-130	-368	-360	2672	1829	2056
Car	Other	Total	-5193	-11628	-13965	76112	52866	58728
LGV	Business	2019	-188	-206	-264	690	757	903
LGV	Business	2034	-106	-143	-157	693	695	968
LGV	Business	Total	-3669	-4603	-5345	20088	20629	27640
LGV	Commuting	2019	-79	-88	-115	297	330	404
LGV	Commuting	2034	-42	-58	-63	285	293	407
LGV	Commuting	Total	-1465	-1887	-2180	8260	8676	11655
LGV	Other	2019	-25	-28	-36	93	104	127
LGV	Other	2034	-13	-18	-20	89	92	128
LGV	Other	Total	-459	-591	-683	2588	2718	3652
OGV1	Business	2019	-59	-80	-75	168	258	345
OGV1	Business	2034	-36	-60	-49	169	230	371
OGV1	Business	Total	-1210	-1872	-1615	4883	6854	10535
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	0
OGV1	Commuting	Total	-2	-3	-2	7	9	14
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-1	-1	-1	3	4	6
OGV2	Business	2019	-67	-84	-91	192	269	370
OGV2	Business	2034	-42	-64	-54	180	251	381
OGV2	Business	Total	-1380	-1976	-1826	5267	7347	10902
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

Yellow Route Option - 30 year

OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	0	4	24	25	15	49	41	30
Car	Business	2034	1	15	37	33	20	66	57	39
Car	Business	Total	18	373	1036	946	569	1916	1633	1135
Car	Commuting	2019	4	289	423	243	117	398	173	148
Car	Commuting	2034	3	356	531	313	143	537	248	198
Car	Commuting	Total	98	10497	15591	9137	4226	15521	7079	5737
Car	Other	2019	5	35	101	86	46	133	149	59
Car	Other	2034	9	150	162	122	67	204	216	71
Car	Other	Total	251	3739	4539	3487	1916	5766	6147	2114
LGV	Business	2019	1	4	9	7	5	13	14	9
LGV	Business	2034	1	14	17	10	6	18	20	12
LGV	Business	Total	26	361	459	286	174	528	573	334
LGV	Commuting	2019	1	5	11	8	5	15	16	10
LGV	Commuting	2034	1	16	19	11	7	21	23	13
LGV	Commuting	Total	30	411	522	326	198	601	652	380
LGV	Other	2019	0	2	4	3	2	5	6	3
LGV	Other	2034	0	6	7	4	2	7	8	5
LGV	Other	Total	10	142	180	112	68	207	225	131
OGV1	Business	2019	-0	1	2	1	1	3	2	8
OGV1	Business	2034	0	2	4	2	1	4	3	12
OGV1	Business	Total	0	61	118	61	28	116	86	336
OGV1	Commuting	2019	-0	0	1	0	0	1	1	2
OGV1	Commuting	2034	0	1	1	1	0	1	1	3
OGV1	Commuting	Total	0	16	30	16	7	30	22	86
OGV1	Other	2019	-0	0	0	0	0	0	0	1
OGV1	Other	2034	0	0	0	0	0	0	0	1
OGV1	Other	Total	0	7	13	7	3	13	10	38
OGV2	Business	2019	-0	1	2	1	1	3	2	8
OGV2	Business	2034	0	2	4	2	1	4	3	11
OGV2	Business	Total	0	64	112	56	27	115	85	324
OGV2	Commuting	2019	-0	0	0	0	0	1	0	1
OGV2	Commuting	2034	0	0	1	0	0	1	1	2
OGV2	Commuting	Total	0	11	20	10	5	20	15	56
OGV2	Other	2019	-0	0	0	0	0	0	0	1
OGV2	Other	2034	0	0	0	0	0	0	0	1
OGV2	Other	Total	0	6	11	6	3	12	9	33

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	115	667	670	407	1323	1107	831
Car	Business	2034	12	302	748	667	400	1360	1164	793
Car	Business	Total	365	7393	21121	19382	11669	39197	33368	23296
Car	Commuting	2019	41	3006	4409	2531	1217	4140	1802	1546
Car	Commuting	2034	21	2622	3908	2303	1054	3952	1824	1457
Car	Commuting	Total	756	77990	115729	67717	31414	114726	52157	42434
Car	Other	2019	47	335	953	815	434	1259	1407	558
Car	Other	2034	62	1006	1087	814	451	1369	1444	478
Car	Other	Total	1659	24011	30211	23369	12813	38475	41143	14293
LGV	Business	2019	18	121	258	202	124	360	391	234
LGV	Business	2034	19	290	341	202	123	376	408	236
LGV	Business	Total	537	7177	9285	5867	3574	10789	11713	6841
LGV	Commuting	2019	8	52	112	88	54	156	170	102
LGV	Commuting	2034	8	119	140	83	50	154	167	97
LGV	Commuting	Total	221	2930	3806	2411	1469	4432	4812	2811
LGV	Other	2019	2	16	35	27	17	49	53	32
LGV	Other	2034	2	37	44	26	16	48	52	30
LGV	Other	Total	69	918	1192	755	460	1388	1507	881
OGV1	Business	2019	-0	21	61	40	20	83	56	228
OGV1	Business	2034	0	49	89	44	20	82	62	240
OGV1	Business	Total	6	1212	2372	1241	582	2388	1756	6872
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	-0	25	50	36	18	80	58	223

Yellow Route Option - 30 year

OGV2	Business	2034	0	51	87	40	20	81	61	230
OGV2	Business	Total	7	1284	2253	1135	555	2354	1739	6630
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	13	115	654	657	403	1275	1010	788
Car	Business	2034	13	304	740	658	398	1328	1095	763
Car	Business	Total	368	7427	20853	19110	11583	38209	31274	22376
Car	Commuting	2019	44	3277	4609	2387	1271	3640	1121	1546
Car	Commuting	2034	24	2830	4025	2177	1094	3629	1276	1416
Car	Commuting	Total	830	84161	119532	64132	32609	104651	36163	41585
Car	Other	2019	50	421	880	678	363	714	989	519
Car	Other	2034	65	1069	1026	701	401	855	1134	450
Car	Other	Total	1751	25907	28457	20082	11294	24106	31885	13437
LGV	Business	2019	18	118	254	194	121	358	392	236
LGV	Business	2034	19	291	338	196	120	366	392	228
LGV	Business	Total	544	7176	9187	5687	3505	10577	11382	6682
LGV	Commuting	2019	8	53	113	89	55	158	171	102
LGV	Commuting	2034	8	120	141	84	51	155	168	97
LGV	Commuting	Total	223	2959	3843	2435	1482	4463	4833	2820
LGV	Other	2019	2	17	36	28	17	49	54	32
LGV	Other	2034	2	38	44	26	16	49	53	30
LGV	Other	Total	70	927	1204	763	464	1398	1514	883
OGV1	Business	2019	-0	24	66	42	20	90	61	254
OGV1	Business	2034	0	54	94	46	21	87	65	258
OGV1	Business	Total	6	1340	2522	1298	602	2539	1853	7415
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	2	5	3	1	4	2	6
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	1	2	1	1	2	1	2
OGV2	Business	2019	-0	33	62	40	19	93	67	275
OGV2	Business	2034	0	61	100	43	21	91	68	268
OGV2	Business	Total	5	1552	2598	1232	591	2635	1952	7768
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	2.57%	3.34%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus		
Travel Time	525815	525815	0		
Vehicle operating costs	-19071	-19071	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - COMMUTING BENEFITS	506744	506744	0		
Consumer - Other user benefits	All Modes	Road	Bus		
Travel Time	193145	193145	0		
Vehicle operating costs	-28991	-28991	0		
User charges	0	0	0		
During Construction & Maintenance	0	0	0		
NET CONSUMER - OTHER BENEFITS	164154	164154	0		
Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	243961	211574	32387	0	0
Vehicle operating costs	-2111	-5634	3523	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0

Yellow Route Option - 30 year

Subtotal	241850	205941	35909	0	0
Private Sector Provider Impacts					
Revenue	0		0		0
Operating costs	0		0		0
Investment costs	0		0		0
Grant/subsidy	0		0		0
Subtotal	0		0		0
Other business Impacts					
Developer contributions	0		0		0
NET BUSINESS IMPACT	241850				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	912748				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport			
Revenue	0	0	0
Operating costs	16904	16904	0
Investment costs	363749	363749	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	380653	380653	0
Central Government Funding: Non-Transport			
Indirect Tax Revenues	1462	1462	0
TOTALS			
Broad Transport Budget	380653	380653	0
Wider Public Finances	1462	1462	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	34
Economic Efficiency: Consumer Users (Commuting)	506744
Economic Efficiency: Consumer Users (Other)	164154
Economic Efficiency: Business Users and Providers	241850
Wider Public Finances (Indirect Taxation Revenues)	-1462
Present Value of Benefits (PVB)	911320
Broad Transport Budget	380653
Present Value of Costs (PVC)	380653
OVERALL IMPACTS	
Net Present Value (NPV)	530667
Benefit to Cost Ratio (BCR)	2.394

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_Yellow_V2 30.txt

Yellow Route Option - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\YELLOW_30.OUT

Elapsed time :

EPRC - 30 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 10:57:46

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
165271 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
133	59	2	Car	Other	All	2019	0.038	0.067	0.562	0.093	0.078
133	59	2	Car	Commuting	All	2019	0.038	0.067	0.562	0.027	0.026
133	59	2	Car	Business	All	2019	0.038	0.067	0.562	0.001	0.001
133	59	2	LGV	Business	All	2019	0.038	0.067	0.562	0.005	0.005
133	59	2	LGV	Commuting	All	2019	0.038	0.067	0.562	0.005	0.005

Displayed 5 warnings of a total of 21 of this type.

Warning (957 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
100	9	1	OGV2	Commuting	All	2034	0.765	0.188	4.066	0.001	0.001
100	9	1	OGV2	Other	All	2034	0.765	0.188	4.066	0.001	0.001
100	9	1	OGV2	Business	All	2034	0.765	0.188	4.066	0.001	0.001

EPRC - 30 year

105	9	1	OGV2	Business	All	2034	0.627	0.155	4.053	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.155	4.053	0.001	0.001

Displayed 5 warnings of a total of 134127 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
79	9	1	OGV2	Other	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Commuting	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Business	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Other	All	2019	1.761	4.759	0.370	0.033	0.033
79	9	1	OGV2	Business	All	2019	1.761	4.759	0.370	0.033	0.033

Displayed 5 warnings of a total of 26990 of this type.

Warning (3585 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.386	3.958	0.025	0.023
73	8	1	Car	Other	All	2034	5.299	1.378	3.845	0.048	0.047
73	8	1	LGV	Commuting	All	2034	5.124	1.353	3.787	0.021	0.021
73	8	1	LGV	Other	All	2034	5.124	1.353	3.787	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.353	3.787	0.021	0.021

Displayed 5 warnings of a total of 3585 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV2	Other	All	2034	0.794	0.201	3.944	0.000
79	8	1	OGV2	Business	All	2034	0.794	0.201	3.944	0.004
79	8	1	OGV2	Commuting	All	2034	0.794	0.201	3.944	0.001
79	8	1	OGV1	Other	All	2034	0.799	0.201	3.968	0.000
79	8	1	OGV1	Business	All	2034	0.799	0.201	3.968	0.004

Displayed 5 warnings of a total of 95 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

EPRC - 30 year

VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

EPRC - 30 year

```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2095 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```

EPRC - 30 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)
 *% change p.a.
 *Start_yr End_yr Growth
 2003 2080 0.00

AV_IND_TAX_CHANGES - (std)
 *% change p.a.
 *Start_yr End_yr Growth
 2011 2050 0.00

CHARGE_TAX_RATES - (used)
 *%
 *charge final intermediate
 1 0.0 0.0
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0

CHARGE_TAX_RATES - (std)
 *%
 *charge final intermediate
 1 0.0 0.0
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

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2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both
 *same growth applies to low, central and high CO2 values

*Start_yr	End_yr	Rel.(%)	Abs.(£/tonne/year)
2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both
 *same growth applies to low, central and high CO2 values

*Start_yr	End_yr	Rel.(%)	Abs.(£/tonne/year)
2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

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2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

EPRC - 30 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

EPRC - 30 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

EPRC - 30 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

EPRC - 30 year

```

*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010     1         5.0     6.5
2011        2080     1         0.0     0.0
2010        2010     2         7.9     10.3
2011        2080     2         0.0     0.0
2010        2010     3         7.9     10.3
2011        2080     3         0.0     0.0
2010        2010     4         7.9     10.3
2011        2080     4         0.0     0.0
2010        2010     5         7.9     10.3
2011        2080     5         0.0     0.0
2010        2010     6         7.9     10.3
2011        2080     6         0.0     0.0
2010        2010     7         0.0     0.0
2011        2080     7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011     1         14.3    0.0
2011        2011     2         14.3    0.0
2011        2011     3         14.3    0.0
2011        2011     4         14.3    0.0
2011        2011     5         14.3    0.0
2011        2011     6         14.3    0.0
2011        2011     7         0.0     0.0
2011        2011     8         0.0     0.0
2012        2100     1         0.0     0.0
2012        2100     2         0.0     0.0
2012        2100     3         0.0     0.0
2012        2100     4         0.0     0.0
2012        2100     5         0.0     0.0
2012        2100     6         0.0     0.0
2012        2100     7         0.0     0.0
2012        2100     8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode purpose  Period1 Period2 Period3 Period4 Period5
1             1       12.0    10.3
1             2       42.9    42.2
1             3       45.1    47.5
2             1       40.2    50.3
2             2       45.1    35.1
2             3       14.7    14.6
3             1       75.6    81.3
3             2       17.0    11.1
3             3        7.4     7.6
4             1       79.7    86.9
4             2       13.2     7.8
4             3        7.1     5.3
5             1       10.2    10.2
5             2       18.9    18.9
5             3       70.8    70.8
6             1       10.2    10.2
6             2       18.9    18.9
6             3       70.8    70.8
7             1       10.2    10.2
7             2       18.9    18.9
7             3       70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode purpose  Period1 Period2 Period3 Period4 Period5
1             1       18.1    13.0    19.9    12.3    3.2
    
```

EPRC - 30 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

EPRC - 30 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	434147	434147
Road	2020	0	1321	1321
Road	2021	0	1270	1270
Road	2022	0	1264	1264
Road	2023	0	1215	1215
Road	2024	0	1168	1168
Road	2025	0	1161	1161
Road	2026	0	1116	1116
Road	2027	0	1073	1073
Road	2028	0	1032	1032
Road	2029	0	1024	1024
Road	2030	0	985	985
Road	2031	0	947	947
Road	2032	0	939	939
Road	2033	0	903	903
Road	2034	0	868	868
Road	2035	0	860	860
Road	2036	0	827	827
Road	2037	0	795	795
Road	2038	0	787	787
Road	2039	0	757	757
Road	2040	0	728	728
Road	2041	0	720	720
Road	2042	0	692	692
Road	2043	0	684	684
Road	2044	0	658	658
Road	2045	0	632	632
Road	2046	0	624	624
Road	2047	0	600	600
Road	2048	0	577	577
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

EPRC - 30 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	460376	460376
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	111881
Car	2019	All	113832	111881
Car	2034	AM Hour 8-9	127298	125149
Car	2034	All	127298	125149
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127208
All	2019	All	129159	127208
All	2034	AM Hour 8-9	144161	142011
All	2034	All	144161	142011

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	974054	0	4497	211538
Road	2034	820412	0	3541	128265	792508	0	3276	130695

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3441	1142
Car	2034	4630	1659	4272	1531
LGV	2019	85	480	80	454
LGV	2034	97	549	90	511
OGV1	2019	53	302	51	292
OGV1	2034	59	332	56	317
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3573	1887
All	2034	4785	2539	4418	2358
Car	Total	137617	48941	127228	45244
LGV	Total	2904	16455	2714	15380
OGV1	Total	1773	10047	1699	9627
OGV2	Total	0	0	0	0
All	Total	142294	75442	131641	70250

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2978	-223	86	80	-6	24	22	-2	24	22	-2
Car	2034	4095	3779	-316	127	118	-10	17	16	-1	17	16	-1
LGV	2019	397	376	-22	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	423	-31	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	241	-9	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	263	-12	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3596	-253	104	97	-7	29	27	-2	29	27	-2
All	2020	3953	3691	-263	108	100	-7	29	27	-2	29	27	-2
All	2021	4061	3788	-273	112	104	-7	28	26	-2	28	26	-2
All	2022	4171	3888	-283	116	108	-8	28	26	-2	28	26	-2

EPRC - 30 year

LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3596	-253	104	97	-7	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4464	-359	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	143402	132994	-10409	4499	4172	-327	622	578	-45	622	578	-45

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2019	45146	0	386	-3037	0	-77
Road	2020	45440	0	389	-2990	0	-77
Road	2021	45518	0	392	-2942	0	-78
Road	2022	45571	0	395	-2893	0	-79
Road	2023	45600	0	397	-2844	0	-80
Road	2024	45606	0	400	-2794	0	-81
Road	2025	45589	0	395	-2744	0	-79
Road	2026	45551	0	390	-2693	0	-77
Road	2027	45493	0	384	-2643	0	-75
Road	2028	45416	0	379	-2592	0	-73
Road	2029	45320	0	374	-2541	0	-71
Road	2030	45206	0	368	-2491	0	-69
Road	2031	45076	0	361	-2440	0	-67
Road	2032	44929	0	354	-2390	0	-66
Road	2033	44768	0	346	-2340	0	-64
Road	2034	44592	0	339	-2290	0	-62
Road	2035	43610	0	326	-2202	0	-60
Road	2036	42650	0	314	-2117	0	-57
Road	2037	41711	0	301	-2036	0	-55
Road	2038	40793	0	290	-1957	0	-53
Road	2039	39895	0	279	-1882	0	-51
Road	2040	39017	0	268	-1810	0	-49
Road	2041	38159	0	258	-1740	0	-47
Road	2042	37320	0	248	-1673	0	-45
Road	2043	36499	0	238	-1609	0	-44
Road	2044	35696	0	229	-1547	0	-42
Road	2045	34911	0	220	-1488	0	-40
Road	2046	34144	0	212	-1430	0	-39
Road	2047	33393	0	204	-1375	0	-37
Road	2048	32659	0	196	-1322	0	-36
Road	2049	31942	0	188	-1272	0	-34
Road	Total	1287219	0	9821	-68124	0	-1866

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2019	39097	0	353	-3259	0	-60
Car	2034	38280	0	311	-2469	0	-49
LGV	2019	4234	0	24	-43	0	-12
LGV	2034	4426	0	20	-25	0	-9
OGV1	2019	918	0	9	84	0	-5
OGV1	2034	951	0	8	65	0	-4
OGV2	2019	897	0	0	181	0	0
OGV2	2034	934	0	0	140	0	0
All	2019	45146	0	386	-3037	0	-77

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All	2034	44592	0	339	-2290	0	-62
Car	Total	1106491	0	9007	-73355	0	-1482
LGV	Total	126528	0	586	-804	0	-277
OGV1	Total	27368	0	228	1912	0	-107
OGV2	Total	26833	0	0	4122	0	0
All	Total	1287219	0	9821	-68124	0	-1866

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	45146	0	386	-3037	-77
All	2034	44592	0	339	-2290	-62
All	Total	1287219	0	9821	-68124	-1866

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	11725	0	44	108	-20
Business	2034	12272	0	38	117	-16
Commuting	2019	24247	0	257	-1572	-75
Commuting	2034	22345	0	218	-1054	-64
Other	2019	9173	0	85	-1573	18
Other	2034	9975	0	83	-1352	18
Business	Total	352158	0	1103	3157	-471
Commuting	Total	654719	0	6372	-32533	-1891
Other	Total	280341	0	2347	-38747	497

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	45146	0	386	-3037	-77
AM Hour 8-9	2034	44592	0	339	-2290	-62
AM Hour 8-9	Total	1287219	0	9821	-68124	-1866

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-0	-11	43	60	173
Car	Business	2034	0	-0	-6	57	80	236
Car	Business	Total	-0	-12	-232	1656	2327	6813
Car	Commuting	2019	-0	-3	-41	234	600	1427
Car	Commuting	2034	-0	-2	-29	271	700	1934
Car	Commuting	Total	-1	-56	-1001	8097	20892	55890
Car	Other	2019	-0	-1	-115	291	260	496
Car	Other	2034	0	-9	-72	491	365	661
Car	Other	Total	-0	-218	-2585	13611	10466	19164
LGV	Business	2019	-0	-0	-7	28	31	48
LGV	Business	2034	0	-1	-4	39	41	66
LGV	Business	Total	-0	-28	-161	1132	1180	1901
LGV	Commuting	2019	-0	-0	-8	32	35	54
LGV	Commuting	2034	0	-1	-5	45	46	75
LGV	Commuting	Total	-0	-32	-183	1289	1343	2164
LGV	Other	2019	-0	-0	-3	11	12	19
LGV	Other	2034	0	-0	-2	15	16	26
LGV	Other	Total	-0	-11	-63	444	463	746
OGV1	Business	2019	-0	-0	-1	5	10	20
OGV1	Business	2034	-0	-0	-1	7	13	28
OGV1	Business	Total	-1	-4	-35	197	370	810
OGV1	Commuting	2019	-0	-0	-0	1	3	5
OGV1	Commuting	2034	-0	-0	-0	2	3	7
OGV1	Commuting	Total	-0	-1	-9	51	95	207
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-0	-0	-4	23	42	92
OGV2	Business	2019	-0	-0	-1	5	10	19
OGV2	Business	2034	-0	-0	-1	7	13	27
OGV2	Business	Total	-1	-4	-37	194	375	785
OGV2	Commuting	2019	-0	-0	-0	1	2	3
OGV2	Commuting	2034	-0	-0	-0	1	2	5
OGV2	Commuting	Total	-0	-1	-6	34	65	136
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	3
OGV2	Other	Total	-0	-0	-4	19	38	79

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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-2	-305	1167	1628	4727
Car	Business	2034	0	-10	-127	1169	1647	4830
Car	Business	Total	-0	-234	-4997	33922	47652	139420
Car	Commuting	2019	-1	-28	-432	2437	6245	14855
Car	Commuting	2034	-0	-11	-214	1994	5154	14244
Car	Commuting	Total	-10	-441	-7718	60387	155731	413012
Car	Other	2019	-0	-8	-1093	2753	2461	4693
Car	Other	2034	0	-62	-483	3285	2441	4424
Car	Other	Total	-0	-1377	-18274	90391	70171	128855
LGV	Business	2019	-0	-4	-199	764	838	1297
LGV	Business	2034	0	-24	-91	808	832	1353
LGV	Business	Total	-0	-546	-3441	23132	24182	38868
LGV	Commuting	2019	-0	-2	-87	332	364	564
LGV	Commuting	2034	0	-10	-37	331	341	554
LGV	Commuting	Total	-0	-222	-1427	9502	9939	15967
LGV	Other	2019	-0	-1	-27	104	114	177
LGV	Other	2034	0	-3	-12	104	107	174
LGV	Other	Total	-0	-70	-447	2976	3113	5001
OGV1	Business	2019	-2	-5	-35	146	275	539
OGV1	Business	2034	-0	-2	-22	138	257	580
OGV1	Business	Total	-16	-83	-733	4056	7599	16545
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-1	-4	-36	146	263	529
OGV2	Business	2034	-1	-2	-23	134	265	560
OGV2	Business	Total	-21	-81	-768	3986	7680	16036
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-2	-321	1139	1582	4731
Car	Business	2034	0	-10	-129	1163	1617	4830
Car	Business	Total	-0	-236	-5152	33596	46721	139459
Car	Commuting	2019	-0	-17	256	3912	6112	11485
Car	Commuting	2034	-0	-3	312	3102	5175	11733
Car	Commuting	Total	-2	-203	7876	93413	155290	338119
Car	Other	2019	-0	-4	-587	3188	1627	3091
Car	Other	2034	0	-63	-160	3517	1795	3245
Car	Other	Total	-0	-1392	-8142	98161	51107	93527
LGV	Business	2019	-0	-2	-209	765	815	1293
LGV	Business	2034	0	-24	-95	810	821	1350
LGV	Business	Total	-0	-541	-3580	23174	23799	38771
LGV	Commuting	2019	-0	-2	-87	336	368	569
LGV	Commuting	2034	0	-10	-38	334	343	558
LGV	Commuting	Total	-0	-224	-1438	9584	10021	16083
LGV	Other	2019	-0	-1	-27	105	115	178
LGV	Other	2034	0	-3	-12	105	108	175
LGV	Other	Total	-0	-70	-450	3003	3140	5039
OGV1	Business	2019	-2	-5	-40	162	299	594
OGV1	Business	2034	-0	-2	-24	150	276	622
OGV1	Business	Total	-13	-75	-814	4418	8151	17784
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-1	6	11	23
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-0	3	5	10
OGV2	Business	2019	-1	-5	-45	180	314	634
OGV2	Business	2034	-0	-2	-28	158	305	641
OGV2	Business	Total	-17	-72	-921	4697	8847	18422
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0

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OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	1	18	49	35	20	66	44	32
Car	Business	2034	1	30	69	46	26	89	64	42
Car	Business	Total	19	826	1970	1344	763	2572	1830	1227
Car	Commuting	2019	4	318	519	295	151	531	214	184
Car	Commuting	2034	4	396	658	392	185	704	298	238
Car	Commuting	Total	121	11648	19274	11366	5467	20443	8568	6933
Car	Other	2019	4	133	211	119	68	178	158	60
Car	Other	2034	8	246	311	177	98	279	241	74
Car	Other	Total	214	6715	8844	5029	2806	7839	6813	2179
LGV	Business	2019	1	19	23	9	5	16	16	10
LGV	Business	2034	1	30	34	13	7	22	22	12
LGV	Business	Total	29	836	956	373	210	630	632	358
LGV	Commuting	2019	1	22	26	11	6	18	18	11
LGV	Commuting	2034	1	34	38	15	8	25	25	14
LGV	Commuting	Total	33	951	1088	425	239	717	720	408
LGV	Other	2019	0	7	9	4	2	6	6	4
LGV	Other	2034	0	12	13	5	3	9	9	5
LGV	Other	Total	11	328	375	146	82	247	248	140
OGV1	Business	2019	0	5	7	2	1	4	2	12
OGV1	Business	2034	0	7	10	3	1	5	3	16
OGV1	Business	Total	0	196	299	88	37	154	97	467
OGV1	Commuting	2019	0	1	2	1	0	1	1	3
OGV1	Commuting	2034	0	2	3	1	0	1	1	4
OGV1	Commuting	Total	0	50	76	23	9	39	25	120
OGV1	Other	2019	0	1	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	1	0	2
OGV1	Other	Total	0	22	34	10	4	18	11	53
OGV2	Business	2019	0	5	7	2	1	4	2	12
OGV2	Business	2034	0	7	11	3	1	5	3	16
OGV2	Business	Total	0	196	300	80	35	149	93	458
OGV2	Commuting	2019	0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	2	0	0	1	1	3
OGV2	Commuting	Total	0	34	52	14	6	26	16	79
OGV2	Other	2019	0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	1	0	2
OGV2	Other	Total	0	20	30	8	4	15	9	46

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	497	1344	952	556	1787	1186	878
Car	Business	2034	13	606	1403	948	534	1823	1319	863
Car	Business	Total	387	16779	40284	27540	15668	52636	37311	25157
Car	Commuting	2019	44	3309	5403	3073	1574	5532	2228	1913
Car	Commuting	2034	28	2916	4843	2884	1363	5186	2196	1750
Car	Commuting	Total	914	86493	142978	84090	40634	151263	63218	51371
Car	Other	2019	42	1262	1995	1123	640	1681	1493	569
Car	Other	2034	52	1644	2084	1188	659	1869	1616	494
Car	Other	Total	1418	44409	59133	33600	18774	52245	45470	14719
LGV	Business	2019	20	516	615	254	148	438	440	263
LGV	Business	2034	21	609	690	266	148	447	448	250
LGV	Business	Total	594	16992	19480	7632	4296	12902	12945	7354
LGV	Commuting	2019	9	224	268	110	64	191	191	115
LGV	Commuting	2034	8	249	283	109	61	183	183	102
LGV	Commuting	Total	244	6972	7997	3135	1766	5301	5319	3024
LGV	Other	2019	3	70	84	35	20	60	60	36
LGV	Other	2034	3	78	89	34	19	57	57	32
LGV	Other	Total	76	2184	2505	982	553	1660	1666	947
OGV1	Business	2019	0	131	197	58	24	111	67	330
OGV1	Business	2034	0	140	215	64	26	108	69	330
OGV1	Business	Total	10	3997	6101	1800	746	3154	1983	9576
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	0	134	189	54	24	107	63	327

EPRC - 30 year

Subtotal	356418	296012	60406	0	0
Private Sector Provider Impacts					
Revenue	0		0	0	
Operating costs	0		0	0	
Investment costs	0		0	0	
Grant/subsidy	0		0	0	
Subtotal	0		0	0	
Other business Impacts					
Developer contributions	0		0	0	
NET BUSINESS IMPACT	356418				
TOTAL					
Present Value of Transport Economic Efficiency Benefits (TEE)	1228916				

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts	ALL MODES	Road	Bus
Local Government Funding			
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0
Central Government Funding: Transport			
Revenue	0	0	0
Operating costs	27604	27604	0
Investment costs	432773	432773	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	460376	460376	0
Central Government Funding: Non-Transport			
Indirect Tax Revenues	1866	1866	0
TOTALS			
Broad Transport Budget	460376	460376	0
Wider Public Finances	1866	1866	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
 Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	45
Economic Efficiency: Consumer Users (Commuting)	628558
Economic Efficiency: Consumer Users (Other)	243940
Economic Efficiency: Business Users and Providers	356418
Wider Public Finances (Indirect Taxation Revenues)	-1866
Present Value of Benefits (PVB)	1227095
Broad Transport Budget	460376
Present Value of Costs (PVC)	460376
OVERALL IMPACTS	
Net Present Value (NPV)	766719
Benefit to Cost Ratio (BCR)	2.665

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
 - calculations completed

File Summary
 - Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_EPRC_V2 30.txt

EPRC - 30 year

- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\EPRC_30.OUT

Elapsed time :

EPRC - 60 year

Transport User Benefit Appraisal TUBA (64-BIT) v1.9.4(1xB)
Program run on Fri Aug 28, 2015 at 11:09:07

ERRORS AND WARNINGS

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored

Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
Warning: Table FLEET_CHANGES: data defined from year 2009 to base year 2009 is ignored
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Warning: Table AV_IND_TAX_CHANGES: data defined from year 2003 to base year 2009 is ignored
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Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
Warning: Table NON_FUEL_VOC_CHANGES: data defined from year 2009 to base year 2009 is ignored
165271 Warnings found

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
133	59	2	Car	Other	All	2019	0.038	0.067	0.562	0.093	0.078
133	59	2	Car	Commuting	All	2019	0.038	0.067	0.562	0.027	0.026
133	59	2	Car	Business	All	2019	0.038	0.067	0.562	0.001	0.001
133	59	2	LGV	Business	All	2019	0.038	0.067	0.562	0.005	0.005
133	59	2	LGV	Commuting	All	2019	0.038	0.067	0.562	0.005	0.005

Displayed 5 warnings of a total of 21 of this type.

Warning (957 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
100	9	1	OGV2	Commuting	All	2034	0.765	0.188	4.066	0.001	0.001
100	9	1	OGV2	Other	All	2034	0.765	0.188	4.066	0.001	0.001
100	9	1	OGV2	Business	All	2034	0.765	0.188	4.066	0.001	0.001

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105	9	1	OGV2	Business	All	2034	0.627	0.155	4.053	0.001	0.001
105	9	1	OGV2	Commuting	All	2034	0.627	0.155	4.053	0.001	0.001

Displayed 5 warnings of a total of 134127 of this type.

Warning (none serious): Ratio of DM to DS travel distance lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
79	9	1	OGV2	Other	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Commuting	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Business	All	2034	1.725	5.111	0.338	0.035	0.035
79	9	1	OGV2	Other	All	2019	1.761	4.759	0.370	0.033	0.033
79	9	1	OGV2	Business	All	2019	1.761	4.759	0.370	0.033	0.033

Displayed 5 warnings of a total of 26990 of this type.

Warning (3585 serious): Ratio of DM to DS travel distance higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DS_dist	Ratio	DM_trips	DS_trips
73	8	1	Car	Business	All	2034	5.486	1.386	3.958	0.025	0.023
73	8	1	Car	Other	All	2034	5.299	1.378	3.845	0.048	0.047
73	8	1	LGV	Commuting	All	2034	5.124	1.353	3.787	0.021	0.021
73	8	1	LGV	Other	All	2034	5.124	1.353	3.787	0.021	0.021
73	8	1	LGV	Business	All	2034	5.124	1.353	3.787	0.021	0.021

Displayed 5 warnings of a total of 3585 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
79	8	1	OGV2	Other	All	2034	0.820	0.232	3.539	0.000
79	8	1	OGV2	Business	All	2034	0.820	0.232	3.539	0.004
79	8	1	OGV2	Commuting	All	2034	0.820	0.232	3.539	0.001
79	8	1	OGV2	Other	All	2019	0.856	0.227	3.771	0.000
79	8	1	OGV2	Business	All	2019	0.856	0.227	3.771	0.003

Displayed 5 warnings of a total of 108 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Speed	DM_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.006
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.005
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.028
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000

Displayed 5 warnings of a total of 146 of this type.

Warning: DS speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
79	8	1	OGV2	Other	All	2034	0.794	0.201	3.944	0.000
79	8	1	OGV2	Business	All	2034	0.794	0.201	3.944	0.004
79	8	1	OGV2	Commuting	All	2034	0.794	0.201	3.944	0.001
79	8	1	OGV1	Other	All	2034	0.799	0.201	3.968	0.000
79	8	1	OGV1	Business	All	2034	0.799	0.201	3.968	0.004

Displayed 5 warnings of a total of 95 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Speed	DS_trips
257	213	1	Car	Commuting	All	2034	54.270	0.483	112.407	0.005
257	213	2	Car	Commuting	All	2019	54.270	0.483	112.407	0.000
257	213	1	Car	Commuting	All	2019	54.270	0.483	112.407	0.004
257	213	2	Car	Commuting	All	2034	54.270	0.483	112.407	0.000
257	213	1	Car	Business	All	2019	54.270	0.483	112.407	0.025

Displayed 5 warnings of a total of 146 of this type.

TUBA ECONOMICS FILE DIFFERENCES

```
PARAMETERS - (used)
TUBA_version 1.9.4
base_year    2009
pres_val_year 2009
GDP_base     120.60 0.00 0.00
av_ind_tax   19.10 0.00 0.00
nt_carbdxvalues 11.10 11.10 11.10
```

```
PARAMETERS - (std)
TUBA_version 1.9.4
base_year    2010
pres_val_year 2010
GDP_base     100.00 0.00 0.00
av_ind_tax   19.00 0.00 0.00
nt_carbdxvalues 26.77 80.32 53.55
t_carbdxvalues 11.76 11.76 11.76
```

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VEHICLE_TYPE/SUBMODE - (used)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV
3	1	N	N	fre	OGV1
4	1	N	N	fre	OGV2
5	2	N	N	per	Bus
6	3	N	N	per	Light Rail
7	3	N	N	per	Heavy Rail

VEHICLE_TYPE/SUBMODE - (std)

*no.	mode	new_mode	P&R	type	description
1	1	N	N	per	Car
2	1	N	N	per	LGV Personal
3	1	N	N	fre	LGV Freight
4	1	N	N	fre	OGV1
5	1	N	N	fre	OGV2
6	2	N	N	per	Bus
7	3	N	N	per	Light Rail
8	3	N	N	per	Heavy rail

FUEL_TYPE - (used)

*no.	name
1	petrol
2	diesel

FUEL_TYPE - (std)

*no.	name
1	Petrol
2	Diesel
3	Electric

TIME_PERIODS - (used)

*no.	description	comments
1	AM Hour 8-9	
2	IP Av Hr 12-14	

TIME_PERIODS - (std)

*no.	description	comments
1	AM peak	(7-10 weekdays)
2	PM peak	(4-7 weekdays)
3	Inter-peak	(10-4 weekdays)
4	Off-peak	(7-7 weekdays)
5	Weekend	(weekend)

DISCOUNT_RATE - (used)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	4.00
31	60	4.00

DISCOUNT_RATE - (std)

*% change p.a.		
*Start_yr	End_yr	Rate
1	30	3.50
31	75	3.00
76	80	2.50

VALUE_OF_TIME - (used)

*pence per hour					
*Vtype/submode	Person_type	VOT_purpose1	VOT_purpose2	VOT_purpose3	..
1	1	2781.0	1308.0	1189.0	
1	2	2781.0	1308.0	1189.0	
2	1	2781.0	1308.0	1189.0	
2	2	2781.0	1308.0	1189.0	
3	1	2781.0	0.0	0.0	
3	2	2781.0	0.0	0.0	
4	1	2781.0	0.0	0.0	
4	2	2781.0	0.0	0.0	
5	1	2781.0	0.0	0.0	
5	2	2781.0	1308.0	1189.0	
6	1	2781.0	0.0	0.0	
6	2	2781.0	1308.0	1189.0	
7	1	2781.0	0.0	0.0	
7	2	2781.0	1308.0	1189.0	

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```

VALUE_OF_TIME - (std)
*pence per hour
*vtype/submode Person_type VOT_purpose1 VOT_purpose2 VOT_purpose3 ..
1 1 2274.0 681.0 604.0
1 2 1725.0 681.0 604.0
2 1 1024.0 681.0 604.0
2 2 1024.0 681.0 604.0
3 1 1024.0 0.0 0.0
3 2 1024.0 0.0 0.0
4 1 1206.0 0.0 0.0
4 2 1206.0 0.0 0.0
5 1 1206.0 0.0 0.0
5 2 1206.0 0.0 0.0
6 1 1232.0 0.0 0.0
6 2 1397.0 681.0 604.0
7 1 0.0 0.0 0.0
7 2 2208.0 681.0 604.0
8 1 0.0 0.0 0.0
8 2 2686.0 681.0 604.0

VALUE_OF_TIME_GROWTH - (used)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2010 2010 0.00 -1.00 -1.00
2011 2011 0.00 1.60 1.60
2012 2020 2.50 2.00 2.00
2021 2025 2.00 1.60 1.60

VALUE_OF_TIME_GROWTH - (std)
*% change p.a.
*Start_yr End_yr VOT_Gr_purpose1 VOT_Gr_purpose2 VOT_Gr_purpose3 ..
2011 2011 0.28 0.28 0.28
2012 2012 -0.38 -0.38 -0.38
2013 2013 1.07 1.07 1.07
2014 2014 2.05 2.05 2.05
2015 2015 1.67 1.67 1.67
2016 2016 1.95 1.95 1.95
2017 2017 1.99 1.99 1.99
2018 2018 1.90 1.90 1.90
2019 2019 2.23 2.23 2.23
2020 2020 2.24 2.24 2.24
2021 2021 1.86 1.86 1.86
2022 2022 1.87 1.87 1.87
2023 2023 1.89 1.89 1.89
2024 2024 1.90 1.90 1.90
2025 2025 2.02 2.02 2.02
2026 2026 2.04 2.04 2.04
2027 2027 2.05 2.05 2.05
2028 2028 2.07 2.07 2.07
2029 2029 2.09 2.09 2.09
2030 2030 2.11 2.11 2.11
2031 2031 2.02 2.02 2.02
2032 2032 2.04 2.04 2.04
2033 2033 2.05 2.05 2.05
2034 2034 1.96 1.96 1.96
2035 2035 2.07 2.07 2.07
2036 2036 2.08 2.08 2.08
2037 2037 2.09 2.09 2.09
2038 2038 2.10 2.10 2.10
2039 2039 2.10 2.10 2.10
2040 2040 2.20 2.20 2.20
2041 2041 2.20 2.20 2.20
2042 2042 2.22 2.22 2.22
2043 2043 2.22 2.22 2.22
2044 2044 2.22 2.22 2.22
2045 2045 2.22 2.22 2.22
2046 2046 2.22 2.22 2.22
2047 2047 2.15 2.15 2.15
2048 2048 2.15 2.15 2.15
2049 2049 2.15 2.15 2.15
2050 2050 2.15 2.15 2.15
2051 2051 2.15 2.15 2.15
2052 2052 2.09 2.09 2.09
2053 2053 2.09 2.09 2.09
2054 2054 2.09 2.09 2.09

```


EPRC - 60 year

2055	2055	2.09	2.09	2.09
2056	2056	2.09	2.09	2.09
2057	2057	2.11	2.11	2.11
2058	2058	2.11	2.11	2.11
2059	2059	2.11	2.11	2.11
2060	2060	2.21	2.21	2.21
2061	2061	2.21	2.21	2.21
2062	2062	2.22	2.22	2.22
2063	2063	2.21	2.21	2.21
2064	2064	2.21	2.21	2.21
2065	2065	2.21	2.21	2.21
2066	2066	2.21	2.21	2.21
2067	2067	2.20	2.20	2.20
2068	2068	2.20	2.20	2.20
2069	2069	2.20	2.20	2.20
2070	2070	2.20	2.20	2.20
2071	2071	2.20	2.20	2.20
2072	2072	2.17	2.17	2.17
2073	2073	2.17	2.17	2.17
2074	2074	2.17	2.17	2.17
2075	2075	2.17	2.17	2.17
2076	2076	2.17	2.17	2.17
2077	2077	2.17	2.17	2.17
2078	2078	2.17	2.17	2.17
2079	2079	2.17	2.17	2.17
2080	2080	2.17	2.17	2.17
2081	2081	2.17	2.17	2.17
2082	2082	2.17	2.17	2.17
2083	2083	2.17	2.17	2.17
2084	2084	2.17	2.17	2.17
2085	2085	2.17	2.17	2.17
2086	2086	2.17	2.17	2.17
2087	2087	2.17	2.17	2.17
2088	2088	2.18	2.18	2.18
2089	2089	2.18	2.18	2.18
2090	2090	2.15	2.15	2.15
2091	2091	2.15	2.15	2.15
2092	2092	2.15	2.15	2.15
2093	2093	2.15	2.15	2.15
2094	2094	2.15	2.15	2.15
2095	2095	2.15	2.15	2.15
2096	2096	2.15	2.15	2.15
2097	2097	2.15	2.15	2.15
2098	2098	2.15	2.15	2.15
2099	2099	2.15	2.15	2.15
2100	2100	2.15	2.15	2.15

AV_IND_TAX_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	Growth
2003	2080	0.00

AV_IND_TAX_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	Growth
2011	2050	0.00

CHARGE_TAX_RATES - (used)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0

CHARGE_TAX_RATES - (std)

*%

*charge	final	intermediate
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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5	17.5	0.0
6	0.0	0.0
7	17.5	0.0
8	17.5	0.0

CHARGE_TAX_RATES_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2010	2095	1	0.00	0.00
2010	2095	2	0.00	0.00
2010	2095	3	0.00	0.00
2010	2095	4	0.00	0.00
2010	2095	5	0.00	0.00
2010	2095	6	0.00	0.00
2010	2095	7	0.00	0.00

CHARGE_TAX_RATES_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	charge	final	intermediate
2011	2011	1	0.00	0.00
2011	2011	2	0.00	0.00
2011	2011	3	0.00	0.00
2011	2011	4	0.00	0.00
2011	2011	5	14.29	0.00
2011	2011	6	0.00	0.00
2011	2011	7	14.29	0.00
2011	2011	8	14.29	0.00
2012	2100	1	0.00	0.00
2012	2100	2	0.00	0.00
2012	2100	3	0.00	0.00
2012	2100	4	0.00	0.00
2012	2100	5	0.00	0.00
2012	2100	6	0.00	0.00
2012	2100	7	0.00	0.00
2012	2100	8	0.00	0.00

FUEL_COST - (used)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	44.8	50.9	21.5	627.57	
2	44.5	40.9	21.5	717.15	

FUEL_COST - (std)

*type	resource(p/unit)	duty(p/unit)	VAT(%)	CO2_grammes/unit	(unit=litre for fuel types 1 & 2; unit=KWH for electric)
1	42.6	57.2	17.5	2244.00	
2	44.3	57.2	17.5	2569.00	
3	12.2	0.0	5.0	379.00	

FUEL_COST_CHANGES - (used)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2010	2010	1	1.00	6.50	-0.50	0.00
2010	2010	2	1.00	10.30	-0.50	0.00
2011	2011	1	1.00	0.00	0.00	0.00
2011	2011	2	1.00	0.00	0.00	0.00
2012	2012	1	1.00	0.00	2.00	0.00
2012	2012	2	1.00	0.00	2.00	0.00
2013	2030	1	1.00	0.00	0.00	0.00
2013	2030	2	1.00	0.00	0.00	0.00
2031	2095	1	0.00	0.00	0.00	0.00
2031	2095	2	0.00	0.00	0.00	0.00

FUEL_COST_CHANGES - (std)

*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	21.94	-0.53	14.29	-0.84
2012	2012	1	1.98	-2.11	0.00	-0.52
2013	2013	1	-3.27	-1.58	0.00	-0.52
2014	2014	1	-0.47	-2.25	0.00	-1.04
2015	2015	1	1.05	-0.72	0.00	-1.05
2016	2016	1	0.96	1.38	0.00	-1.06
2017	2017	1	1.03	1.67	0.00	-1.07
2018	2018	1	1.02	1.76	0.00	-1.08
2019	2019	1	1.01	1.86	0.00	-1.10
2020	2020	1	1.07	1.47	0.00	-1.11
2021	2021	1	0.99	1.27	0.00	0.00
2022	2022	1	1.05	1.08	0.00	0.00

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2023	2023	1	1.03	1.08	0.00	0.00
2024	2024	1	1.02	1.08	0.00	0.00
2025	2025	1	1.01	1.08	0.00	0.00
2026	2026	1	1.00	1.08	0.00	0.00
2027	2027	1	1.06	1.08	0.00	0.00
2028	2028	1	1.05	1.08	0.00	0.00
2029	2029	1	1.04	1.08	0.00	0.00
2030	2030	1	1.03	1.08	0.00	0.00
2031	2100	1	0.00	1.08	0.00	0.00
2011	2011	2	26.62	-0.53	14.29	0.19
2012	2012	2	3.19	-2.11	0.00	-0.52
2013	2013	2	-3.51	-1.58	0.00	-0.52
2014	2014	2	1.55	-2.25	0.00	-0.56
2015	2015	2	1.08	-0.72	0.00	-0.56
2016	2016	2	0.99	1.38	0.00	-0.56
2017	2017	2	1.06	1.67	0.00	-0.57
2018	2018	2	1.04	1.76	0.00	-0.57
2019	2019	2	1.03	1.86	0.00	-0.57
2020	2020	2	1.10	1.47	0.00	-0.58
2021	2021	2	1.01	1.27	0.00	0.00
2022	2022	2	1.07	1.08	0.00	0.00
2023	2023	2	1.06	1.08	0.00	0.00
2024	2024	2	1.05	1.08	0.00	0.00
2025	2025	2	1.04	1.08	0.00	0.00
2026	2026	2	1.03	1.08	0.00	0.00
2027	2027	2	1.09	1.08	0.00	0.00
2028	2028	2	1.08	1.08	0.00	0.00
2029	2029	2	1.06	1.08	0.00	0.00
2030	2030	2	1.05	1.08	0.00	0.00
2031	2100	2	0.00	1.08	0.00	0.00
2011	2011	3	4.81	0.00	0.00	-1.83
2012	2012	3	4.12	0.00	0.00	-1.99
2013	2013	3	8.67	0.00	0.00	-2.16
2014	2014	3	-0.36	0.00	0.00	-2.36
2015	2015	3	6.39	0.00	0.00	-2.59
2016	2016	3	5.19	0.00	0.00	-2.83
2017	2017	3	3.69	0.00	0.00	-3.11
2018	2018	3	1.75	0.00	0.00	-3.43
2019	2019	3	7.59	0.00	0.00	-3.79
2020	2020	3	-2.83	0.00	0.00	-4.20
2021	2021	3	1.24	0.00	0.00	-4.68
2022	2022	3	3.88	0.00	0.00	-5.24
2023	2023	3	-3.26	0.00	0.00	-5.91
2024	2024	3	1.92	0.00	0.00	-6.70
2025	2025	3	1.56	0.00	0.00	-7.67
2026	2026	3	0.71	0.00	0.00	-8.86
2027	2027	3	-0.78	0.00	0.00	-10.38
2028	2028	3	0.65	0.00	0.00	-12.37
2029	2029	3	0.01	0.00	0.00	-15.07
2030	2030	3	-0.44	0.00	0.00	-18.93
2031	2031	3	0.10	0.00	0.00	-6.71
2032	2032	3	0.05	0.00	0.00	-6.71
2033	2033	3	0.02	0.00	0.00	-6.71
2034	2034	3	0.00	0.00	0.00	-6.71
2035	2035	3	-0.02	0.00	0.00	-6.71
2036	2036	3	-0.03	0.00	0.00	-6.71
2037	2037	3	-0.05	0.00	0.00	-6.71
2038	2038	3	-0.06	0.00	0.00	-6.72
2039	2039	3	-0.07	0.00	0.00	-6.71
2040	2040	3	-0.08	0.00	0.00	-6.72
2041	2041	3	-0.26	0.00	0.00	-11.04
2042	2042	3	0.23	0.00	0.00	1.78
2043	2043	3	-0.21	0.00	0.00	-9.44
2044	2044	3	-0.44	0.00	0.00	-15.75
2045	2045	3	0.15	0.00	0.00	0.59
2046	2046	3	-0.20	0.00	0.00	-9.43
2047	2047	3	-0.23	0.00	0.00	-10.79
2048	2048	3	0.07	0.00	0.00	-1.25
2049	2049	3	-0.05	0.00	0.00	-5.00
2050	2050	3	0.10	0.00	0.00	0.00
2051	2051	3	0.11	0.00	0.00	0.00
2052	2052	3	0.10	0.00	0.00	0.00
2053	2053	3	0.10	0.00	0.00	0.00
2054	2054	3	0.10	0.00	0.00	0.00
2055	2055	3	0.10	0.00	0.00	0.00
2056	2056	3	0.10	0.00	0.00	0.00

EPRC - 60 year

2057	2057	3	0.10	0.00	0.00	0.00
2058	2058	3	0.09	0.00	0.00	0.00
2059	2059	3	0.09	0.00	0.00	0.00
2060	2060	3	0.09	0.00	0.00	0.00
2061	2061	3	0.07	0.00	0.00	0.00
2062	2062	3	0.07	0.00	0.00	0.00
2063	2063	3	0.06	0.00	0.00	0.00
2064	2064	3	0.06	0.00	0.00	0.00
2065	2065	3	0.05	0.00	0.00	0.00
2066	2066	3	0.05	0.00	0.00	0.00
2067	2067	3	0.04	0.00	0.00	0.00
2068	2068	3	0.04	0.00	0.00	0.00
2069	2069	3	0.03	0.00	0.00	0.00
2070	2070	3	0.03	0.00	0.00	0.00
2071	2071	3	0.03	0.00	0.00	0.00
2072	2072	3	0.02	0.00	0.00	0.00
2073	2073	3	0.02	0.00	0.00	0.00
2074	2074	3	0.01	0.00	0.00	0.00
2075	2075	3	0.01	0.00	0.00	0.00
2076	2076	3	0.00	0.00	0.00	0.00
2077	2077	3	0.00	0.00	0.00	0.00
2078	2078	3	-0.01	0.00	0.00	0.00
2079	2079	3	-0.01	0.00	0.00	0.00
2080	2080	3	-0.02	0.00	0.00	0.00
2081	2081	3	-0.00	0.00	0.00	0.00
2082	2082	3	-0.01	0.00	0.00	0.00
2083	2083	3	-0.01	0.00	0.00	0.00
2084	2084	3	-0.02	0.00	0.00	0.00
2085	2085	3	-0.01	0.00	0.00	0.00
2086	2086	3	-0.02	0.00	0.00	0.00
2087	2087	3	-0.03	0.00	0.00	0.00
2088	2088	3	-0.03	0.00	0.00	0.00
2089	2089	3	-0.03	0.00	0.00	0.00
2090	2090	3	-0.03	0.00	0.00	0.00
2091	2091	3	-0.03	0.00	0.00	0.00
2092	2092	3	-0.03	0.00	0.00	0.00
2093	2093	3	-0.04	0.00	0.00	0.00
2094	2094	3	-0.04	0.00	0.00	0.00
2095	2095	3	-0.04	0.00	0.00	0.00
2096	2096	3	-0.04	0.00	0.00	0.00
2097	2097	3	-0.04	0.00	0.00	0.00
2098	2098	3	-0.04	0.00	0.00	0.00
2099	2099	3	-0.04	0.00	0.00	0.00
2100	2100	3	-0.04	0.00	0.00	0.00

CARBDEX_VALUE_CHANGES - (used)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2010	2010	5.000	0.000
2011	2011	5.000	0.000
2012	2012	7.000	0.000
2013	2013	8.000	0.000
2014	2014	7.000	0.000
2015	2015	117.000	0.000
2016	2095	5.000	0.000

CARBDEX_VALUE_CHANGES - (std)

*relative (%p.a.) or absolute (fp.a.) growth; either absolute or relative may be defined, not both

*same growth applies to low, central and high CO2 values

*Start_yr End_yr Rel.(%) Abs.(£/tonne/year)

2011	2011	1.517	0.000
2012	2012	1.500	0.000
2013	2013	1.500	0.000
2014	2014	1.500	0.000
2015	2015	1.500	0.000
2016	2016	1.500	0.000
2017	2017	1.500	0.000
2018	2018	1.500	0.000
2019	2019	1.500	0.000
2020	2020	1.500	0.000
2021	2021	1.666	0.000
2022	2022	1.639	0.000
2023	2023	1.613	0.000
2024	2024	1.587	0.000
2025	2025	1.563	0.000

EPRC - 60 year

2026	2026	1.538	0.000
2027	2027	1.515	0.000
2028	2028	1.493	0.000
2029	2029	1.471	0.000
2030	2030	0.899	0.000
2031	2031	9.882	0.000
2032	2032	8.497	0.000
2033	2033	7.831	0.000
2034	2034	7.263	0.000
2035	2035	6.771	0.000
2036	2036	6.341	0.000
2037	2037	5.963	0.000
2038	2038	5.628	0.000
2039	2039	5.328	0.000
2040	2040	5.058	0.000
2041	2041	4.815	0.000
2042	2042	4.594	0.000
2043	2043	4.392	0.000
2044	2044	4.207	0.000
2045	2045	4.037	0.000
2046	2046	3.881	0.000
2047	2047	3.736	0.000
2048	2048	3.601	0.000
2049	2049	3.476	0.000
2050	2050	3.359	0.000
2051	2051	2.501	0.000
2052	2052	2.265	0.000
2053	2053	2.165	0.000
2054	2054	2.056	0.000
2055	2055	1.856	0.000
2056	2056	1.779	0.000
2057	2057	1.589	0.000
2058	2058	1.446	0.000
2059	2059	1.330	0.000
2060	2060	1.201	0.000
2061	2061	0.673	0.000
2062	2062	0.618	0.000
2063	2063	0.401	0.000
2064	2064	0.283	0.000
2065	2065	0.079	0.000
2066	2066	0.033	0.000
2067	2067	-0.193	0.000
2068	2068	-0.302	0.000
2069	2069	-0.461	0.000
2070	2070	-0.585	0.000
2071	2071	-0.609	0.000
2072	2072	-0.738	0.000
2073	2073	-0.837	0.000
2074	2074	-1.033	0.000
2075	2075	-1.037	0.000
2076	2076	-1.310	0.000
2077	2077	-1.316	0.000
2078	2078	-1.493	0.000
2079	2079	-1.571	0.000
2080	2080	-1.769	0.000
2081	2081	-1.478	0.000
2082	2082	-1.672	0.000
2083	2083	-1.769	0.000
2084	2084	-1.854	0.000
2085	2085	-1.834	0.000
2086	2086	-2.050	0.000
2087	2087	-2.154	0.000
2088	2088	-2.198	0.000
2089	2089	-2.321	0.000

FLEET - (used)

*veh_type	%petrol	%diesel
1	77.60	22.40
2	15.00	85.00
3	15.00	85.00
4	15.00	85.00
5	0.00	100.00
6	0.00	100.00
7	0.00	100.00

FLEET - (std)

EPRC - 60 year

*veh_type	%Petrol	%Diesel	%Electric
1	59.27	40.73	0.00
2	5.86	94.14	0.00
3	5.86	94.14	0.00
4	0.00	100.00	0.00
5	0.00	100.00	0.00
6	0.00	100.00	0.00
7	0.00	100.00	0.00
8	0.00	100.00	0.00

FLEET_CHANGES - (used)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_petrol	%Change_diesel
2009	2009	1	-2.400	0.000
2010	2010	1	-2.400	0.000
2011	2025	1	-1.270	0.000
2026	2040	1	0.000	0.000

FLEET_CHANGES - (std)

*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.815	5.471	5350.000
2012	2012	1	-3.966	5.188	100.000
2013	2013	1	-4.130	4.932	50.000
2014	2014	1	-4.308	4.700	33.435
2015	2015	1	-4.502	4.489	24.981
2016	2016	1	-1.777	1.335	97.738
2017	2017	1	-1.809	1.317	49.459
2018	2018	1	-1.842	1.300	33.071
2019	2019	1	-1.877	1.283	24.852
2020	2020	1	-1.913	1.267	19.918
2021	2021	1	0.323	-0.826	32.793
2022	2022	1	0.322	-0.833	24.695
2023	2023	1	0.321	-0.840	19.804
2024	2024	1	0.320	-0.847	16.531
2025	2025	1	0.319	-0.854	14.186
2026	2026	1	0.021	-1.060	21.756
2027	2027	1	0.021	-1.071	17.865
2028	2028	1	0.021	-1.083	15.160
2029	2029	1	0.021	-1.095	13.164
2030	2030	1	0.021	-1.107	11.633
2011	2011	2	-7.578	0.472	0.000
2012	2012	2	-8.200	0.470	0.000
2013	2013	2	-8.932	0.467	0.000
2014	2014	2	-9.810	0.465	0.000
2015	2015	2	-10.875	0.463	0.000
2016	2016	2	-9.634	0.364	0.000
2017	2017	2	-10.660	0.363	0.000
2018	2018	2	-11.933	0.361	0.000
2019	2019	2	-13.553	0.360	0.000
2020	2020	2	-15.674	0.359	0.000
2021	2021	2	-8.978	0.173	0.000
2022	2022	2	-9.864	0.172	0.000
2023	2023	2	-10.950	0.172	0.000
2024	2024	2	-12.289	0.172	0.000
2025	2025	2	-14.010	0.171	0.000
2026	2026	2	-4.886	0.051	0.000
2027	2027	2	-5.137	0.051	0.000
2028	2028	2	-5.426	0.051	0.000
2029	2029	2	-5.726	0.051	0.000
2030	2030	2	-6.074	0.051	0.000
2011	2011	3	0.000	0.000	0.000
2012	2012	3	0.000	0.000	0.000
2013	2013	3	0.000	0.000	0.000
2014	2014	3	0.000	0.000	0.000
2015	2015	3	0.000	0.000	0.000
2016	2016	3	0.000	0.000	0.000
2017	2017	3	0.000	0.000	0.000
2018	2018	3	0.000	0.000	0.000
2019	2019	3	0.000	0.000	0.000
2020	2020	3	0.000	0.000	0.000
2021	2021	3	0.000	0.000	0.000
2022	2022	3	0.000	0.000	0.000
2023	2023	3	0.000	0.000	0.000
2024	2024	3	0.000	0.000	0.000
2025	2025	3	0.000	0.000	0.000

EPRC - 60 year

2026	2026	3	0.000	0.000	0.000
2027	2027	3	0.000	0.000	0.000
2028	2028	3	0.000	0.000	0.000
2029	2029	3	0.000	0.000	0.000
2030	2030	3	0.000	0.000	0.000

FUEL_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
1	2	0.1605	-0.00269	0.18233E-04	0.00000E+00	140
2	1	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
2	2	0.2177	-0.00352	0.28259E-04	0.00000E+00	140
3	1	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
3	2	0.4448	-0.00718	0.52184E-04	0.00000E+00	96
5	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speed(km/h)
1	1	0.9640	0.04145	-0.45416E-04	0.20135E-05	140
1	2	0.4371	0.05862	-0.52488E-03	0.41271E-05	140
1	3	0.0000	0.12564	0.00000E+00	0.00000E+00	140
2	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
2	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
3	1	1.5565	0.06425	-0.74448E-03	0.10055E-04	140
3	2	1.0453	0.05790	-0.43290E-03	0.80252E-05	140
4	2	1.4774	0.24562	-0.35724E-02	0.30638E-04	96
5	2	3.3907	0.39438	-0.46423E-02	0.35922E-04	96
6	2	4.1156	0.30646	-0.42064E-02	0.36526E-04	96

FUEL_EFFICIENCY - (used)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2010	2024	1	1	-2.00
	2010	2024	1	2	-2.00
	2025	2095	1	1	0.00
	2025	2095	1	2	0.00
	2010	2095	2	1	0.00
	2010	2095	2	2	0.00
	2010	2095	3	1	0.00
	2010	2095	3	2	0.00
	2010	2024	5	1	-2.00
	2010	2024	5	2	-2.00

FUEL_EFFICIENCY - (std)

*% p.a.	*Start_yr	End_yr	veh_type	fuel_type	change
	2011	2015	1	1	2.09
	2011	2015	1	2	1.71
	2011	2015	1	3	-0.11
	2011	2015	2	1	0.66
	2011	2015	2	2	2.07
	2011	2015	3	1	0.66
	2011	2015	3	2	2.07
	2016	2020	1	1	3.72
	2016	2020	1	2	2.22
	2016	2020	1	3	0.31
	2016	2020	2	1	1.38
	2016	2020	2	2	2.34
	2016	2020	3	1	1.38
	2016	2020	3	2	2.34
	2021	2025	1	1	3.63
	2021	2025	1	2	2.62
	2021	2025	1	3	0.71
	2021	2025	2	1	3.07
	2021	2025	2	2	2.19
	2021	2025	3	1	3.07
	2021	2025	3	2	2.19
	2026	2030	1	1	2.10
	2026	2030	1	2	2.10
	2026	2030	1	3	1.19
	2026	2030	2	1	2.95
	2026	2030	2	2	1.30
	2026	2030	3	1	2.95
	2026	2030	3	2	1.30
	2031	2035	1	1	0.74
	2031	2035	1	2	0.96

EPRC - 60 year

2031	2035	1	3	0.26
2031	2035	2	1	0.86
2031	2035	2	2	0.57
2031	2035	3	1	0.86
2031	2035	3	2	0.57
2036	2100	1	1	0.00
2036	2100	1	2	0.00
2036	2100	1	3	0.00
2036	2100	2	1	0.00
2036	2100	2	2	0.00
2036	2100	3	1	0.00
2036	2100	3	2	0.00

NON_FUEL_VOC - (used)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000
1	6.388	36.783	6.388	36.783
2	11.413	65.599	0.000	0.000
3	10.623	417.431	0.000	0.000
4	20.666	804.625	0.000	0.000
5	48.198	1098.877	0.000	0.000
6	0.000	0.000	0.000	0.000
7	48.198	1098.877	0.000	0.000

NON_FUEL_VOC - (std)

*veh_type	a_nonfuel_wrk	b_nonfuel_wrk	a_nonfuel_nw	b_nonfuel_nw
1	4.966	135.946	3.846	0.000
1	4.966	135.946	3.846	0.000
1	1.157	135.946	1.157	0.000
2	7.213	47.113	7.213	0.000
2	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
3	7.213	47.113	7.213	0.000
4	6.714	263.817	0.000	0.000
5	13.061	508.525	0.000	0.000
6	30.461	694.547	0.000	0.000

NON_FUEL_VOC_CHANGES - (used)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2009	2080	1	0.000
	2009	2080	2	0.000
	2009	2080	3	0.000
	2009	2080	4	0.000
	2009	2080	5	0.000

NON_FUEL_VOC_CHANGES - (std)

*% p.a.	*Start_yr	End_yr	veh_type	gnf
	2011	2100	1	0.000
	2011	2100	2	0.000
	2011	2100	3	0.000
	2011	2100	4	0.000
	2011	2100	5	0.000
	2011	2100	6	0.000
	2011	2100	7	0.000
	2011	2100	8	0.000

NON_FUEL_TAX_RATES - (used)

*% submode	final	intermediate
1	21.5	0.0
2	21.5	0.0
3	21.5	0.0
4	21.5	0.0
5	21.5	0.0
6	21.5	0.0
7	21.5	0.0

NON_FUEL_TAX_RATES - (std)

EPRC - 60 year

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*%
*submode    final    intermediate
1           17.5     0.0
2           17.5     0.0
3           17.5     0.0
4           17.5     0.0
5           17.5     0.0
6           17.5     0.0
7           0.0      0.0
8           0.0      0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (used)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2010        2010    1         5.0     6.5
2011        2080    1         0.0     0.0
2010        2010    2         7.9     10.3
2011        2080    2         0.0     0.0
2010        2010    3         7.9     10.3
2011        2080    3         0.0     0.0
2010        2010    4         7.9     10.3
2011        2080    4         0.0     0.0
2010        2010    5         7.9     10.3
2011        2080    5         0.0     0.0
2010        2010    6         7.9     10.3
2011        2080    6         0.0     0.0
2010        2010    7         0.0     0.0
2011        2080    7         0.0     0.0
    
```

NON_FUEL_TAX_RATES_CHANGES - (std)

```

*% change p.a.
*Start_yr   End_yr   Submode   final   intermediate
2011        2011    1         14.3    0.0
2011        2011    2         14.3    0.0
2011        2011    3         14.3    0.0
2011        2011    4         14.3    0.0
2011        2011    5         14.3    0.0
2011        2011    6         14.3    0.0
2011        2011    7         0.0     0.0
2011        2011    8         0.0     0.0
2012        2100    1         0.0     0.0
2012        2100    2         0.0     0.0
2012        2100    3         0.0     0.0
2012        2100    4         0.0     0.0
2012        2100    5         0.0     0.0
2012        2100    6         0.0     0.0
2012        2100    7         0.0     0.0
2012        2100    8         0.0     0.0
    
```

DEFAULT_PURPOSE_SPLIT - (used)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        12.0    10.3
1               2        42.9    42.2
1               3        45.1    47.5
2               1        40.2    50.3
2               2        45.1    35.1
2               3        14.7    14.6
3               1        75.6    81.3
3               2        17.0    11.1
3               3         7.4     7.6
4               1        79.7    86.9
4               2        13.2     7.8
4               3         7.1     5.3
5               1        10.2    10.2
5               2        18.9    18.9
5               3        70.8    70.8
6               1        10.2    10.2
6               2        18.9    18.9
6               3        70.8    70.8
7               1        10.2    10.2
7               2        18.9    18.9
7               3        70.8    70.8
    
```

DEFAULT_PURPOSE_SPLIT - (std)

```

*vtype/submode  purpose  Period1  Period2  Period3  Period4  Period5
1               1        18.1    13.0    19.9    12.3    3.2
    
```

EPRC - 60 year

1	2	46.0	40.8	11.4	36.2	8.5
1	3	35.9	46.2	68.7	51.5	88.3
2	1	0.0	0.0	0.0	0.0	0.0
2	2	0.0	0.0	0.0	0.0	0.0
2	3	100.0	100.0	100.0	100.0	100.0
3	1	100.0	100.0	100.0	100.0	100.0
3	2	0.0	0.0	0.0	0.0	0.0
3	3	0.0	0.0	0.0	0.0	0.0
4	1	100.0	100.0	100.0	100.0	100.0
4	2	0.0	0.0	0.0	0.0	0.0
4	3	0.0	0.0	0.0	0.0	0.0
5	1	100.0	100.0	100.0	100.0	100.0
5	2	0.0	0.0	0.0	0.0	0.0
5	3	0.0	0.0	0.0	0.0	0.0
6	1	3.9	3.9	2.0	5.7	1.5
6	2	30.0	36.6	11.1	38.1	6.4
6	3	66.1	59.5	86.9	56.2	92.0
7	1	1.9	1.8	0.2	2.3	0.4
7	2	82.4	75.7	8.5	28.9	23.3
7	3	15.7	22.5	91.3	68.9	76.3
8	1	14.1	16.4	22.4	23.2	6.3
8	2	51.9	55.9	10.2	53.1	4.3
8	3	34.1	27.7	67.4	23.7	89.5

DEFAULT_PERSON_FACTORS - (used)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..
1	1	1	1.00	1.00
1	1	2	0.26	0.24
1	2	1	1.00	1.00
1	2	2	0.23	0.21
1	3	1	1.00	1.00
1	3	2	0.68	0.64
2	1	1	1.00	1.00
2	1	2	0.38	0.36
2	2	1	1.00	1.00
2	2	2	0.40	0.40
2	3	1	1.00	1.00
2	3	2	0.48	0.47
3	1	1	1.00	1.00
3	1	2	0.09	0.09
3	2	1	1.00	1.00
3	2	2	0.24	0.25
3	3	1	1.00	1.00
3	3	2	0.27	0.29
4	1	1	1.00	1.00
4	1	2	0.03	0.03
4	2	1	1.00	1.00
4	2	2	0.08	0.11
4	3	1	1.00	1.00
4	3	2	0.16	0.13
5	1	1	1.00	1.00
5	1	2	0.35	0.35
5	2	1	1.00	1.00
5	2	2	1.50	1.50
5	3	1	1.00	1.00
5	3	2	8.35	8.35

DEFAULT_PERSON_FACTORS - (std)

*Vtype/submode	purpose	person_type	FactorPer1	FactorPer2..			
1	1	1	1.00	1.00	1.00	1.00	1.00
1	1	2	0.22	0.16	0.18	0.17	0.27
1	2	1	1.00	1.00	1.00	1.00	1.00
1	2	2	0.15	0.12	0.14	0.12	0.13
1	3	1	1.00	1.00	1.00	1.00	1.00
1	3	2	0.66	0.78	0.73	0.73	0.92
2	2	1	1.00	1.00	1.00	1.00	1.00
2	2	2	0.46	0.46	0.46	0.46	1.03
2	3	1	1.00	1.00	1.00	1.00	1.00
2	3	2	0.46	0.46	0.46	0.46	1.03
3	1	1	1.00	1.00	1.00	1.00	1.00
3	1	2	0.20	0.20	0.20	0.20	0.26
4	1	1	1.00	1.00	1.00	1.00	1.00
5	1	1	1.00	1.00	1.00	1.00	1.00

DEFAULT_PERSON_FACTORS_CHANGE - (used)

*% change p.a.

EPRC - 60 year

Bus	2029	0	0	0	0	0	0	0	0
Bus	2030	0	0	0	0	0	0	0	0
Bus	2031	0	0	0	0	0	0	0	0
Bus	2032	0	0	0	0	0	0	0	0
Bus	2033	0	0	0	0	0	0	0	0
Bus	2034	0	0	0	0	0	0	0	0
Bus	2035	0	0	0	0	0	0	0	0
Bus	2036	0	0	0	0	0	0	0	0
Bus	2037	0	0	0	0	0	0	0	0
Bus	2038	0	0	0	0	0	0	0	0
Bus	2039	0	0	0	0	0	0	0	0
Bus	2040	0	0	0	0	0	0	0	0
Bus	2041	0	0	0	0	0	0	0	0
Bus	2042	0	0	0	0	0	0	0	0
Bus	2043	0	0	0	0	0	0	0	0
Bus	2044	0	0	0	0	0	0	0	0
Bus	2045	0	0	0	0	0	0	0	0
Bus	2046	0	0	0	0	0	0	0	0
Bus	2047	0	0	0	0	0	0	0	0
Bus	2048	0	0	0	0	0	0	0	0

PRESENT_VALUE_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2019	0	434147	434147
Road	2020	0	1321	1321
Road	2021	0	1270	1270
Road	2022	0	1264	1264
Road	2023	0	1215	1215
Road	2024	0	1168	1168
Road	2025	0	1161	1161
Road	2026	0	1116	1116
Road	2027	0	1073	1073
Road	2028	0	1032	1032
Road	2029	0	1024	1024
Road	2030	0	985	985
Road	2031	0	947	947
Road	2032	0	939	939
Road	2033	0	903	903
Road	2034	0	868	868
Road	2035	0	860	860
Road	2036	0	827	827
Road	2037	0	795	795
Road	2038	0	787	787
Road	2039	0	757	757
Road	2040	0	728	728
Road	2041	0	720	720
Road	2042	0	692	692
Road	2043	0	684	684
Road	2044	0	658	658
Road	2045	0	632	632
Road	2046	0	624	624
Road	2047	0	600	600
Road	2048	0	577	577
Bus	2019	0	0	0
Bus	2020	0	0	0
Bus	2021	0	0	0
Bus	2022	0	0	0
Bus	2023	0	0	0
Bus	2024	0	0	0
Bus	2025	0	0	0
Bus	2026	0	0	0
Bus	2027	0	0	0
Bus	2028	0	0	0
Bus	2029	0	0	0
Bus	2030	0	0	0
Bus	2031	0	0	0
Bus	2032	0	0	0
Bus	2033	0	0	0
Bus	2034	0	0	0
Bus	2035	0	0	0
Bus	2036	0	0	0
Bus	2037	0	0	0
Bus	2038	0	0	0
Bus	2039	0	0	0
Bus	2040	0	0	0

EPRC - 60 year

Bus	2041	0	0	0
Bus	2042	0	0	0
Bus	2043	0	0	0
Bus	2044	0	0	0
Bus	2045	0	0	0
Bus	2046	0	0	0
Bus	2047	0	0	0
Bus	2048	0	0	0
Road	Total	0	460376	460376
Bus	Total	0	0	0

TRIP_MATRIX_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2019	AM Hour 8-9	113832	111881
Car	2019	All	113832	111881
Car	2034	AM Hour 8-9	127298	125149
Car	2034	All	127298	125149
LGV	2019	AM Hour 8-9	12066	12066
LGV	2019	All	12066	12066
LGV	2034	AM Hour 8-9	13323	13323
LGV	2034	All	13323	13323
OGV1	2019	AM Hour 8-9	1630	1630
OGV1	2019	All	1630	1630
OGV1	2034	AM Hour 8-9	1770	1770
OGV1	2034	All	1770	1770
OGV2	2019	AM Hour 8-9	1630	1630
OGV2	2019	All	1630	1630
OGV2	2034	AM Hour 8-9	1770	1770
OGV2	2034	All	1770	1770
All	2019	AM Hour 8-9	129159	127208
All	2019	All	129159	127208
All	2034	AM Hour 8-9	144161	142011
All	2034	All	144161	142011

DM&DS_USER_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2019	1004595	0	4817	208320	974054	0	4497	211538
Road	2034	820412	0	3541	128265	792508	0	3276	130695

FUEL_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum		Do something	
		petrol	diesel	petrol	diesel
Car	2019	3699	1227	3441	1142
Car	2034	4630	1659	4272	1531
LGV	2019	85	480	80	454
LGV	2034	97	549	90	511
OGV1	2019	53	302	51	292
OGV1	2034	59	332	56	317
OGV2	2019	0	0	0	0
OGV2	2034	0	0	0	0
All	2019	3837	2009	3573	1887
All	2034	4785	2539	4418	2358
Car	Total	276503	98698	255392	91160
LGV	Total	5808	32910	5418	30704
OGV1	Total	3529	20000	3378	19140
OGV2	Total	0	0	0	0
All	Total	285839	151607	264188	141004

CO2_EMISSIONS_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2019	3202	2978	-223	86	80	-6	24	22	-2	24	22	-2
Car	2034	4095	3779	-316	127	118	-10	17	16	-1	17	16	-1
LGV	2019	397	376	-22	11	10	-1	3	3	-0	3	3	-0
LGV	2034	454	423	-31	14	13	-1	2	2	-0	2	2	-0
OGV1	2019	250	241	-9	7	7	-0	2	2	-0	2	2	-0
OGV1	2034	275	263	-12	9	8	-0	1	1	-0	1	1	-0
OGV2	2019	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2034	0	0	0	0	0	0	0	0	0	0	0	0
All	2019	3849	3596	-253	104	97	-7	29	27	-2	29	27	-2
All	2020	3953	3691	-263	108	100	-7	29	27	-2	29	27	-2
All	2021	4061	3788	-273	112	104	-7	28	26	-2	28	26	-2
All	2022	4171	3888	-283	116	108	-8	28	26	-2	28	26	-2

EPRC - 60 year

All	2021	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2022	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2024	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2025	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2026	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2027	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2028	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2029	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2030	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2031	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2034	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2035	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2036	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2037	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2038	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2039	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2040	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2041	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2042	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2043	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2044	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2045	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2046	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2047	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2048	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2049	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2050	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2051	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2052	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2053	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2054	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2055	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2056	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2057	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2058	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2059	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2060	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2061	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2062	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2063	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2064	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2065	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2066	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2067	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2068	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2069	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2070	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2071	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2072	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2073	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2074	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2075	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2076	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2077	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2078	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2079	0	0	0	0	0	0	0	0	0	0	0	0	0
Car	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
LGV	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

CO2_EMISSIONS_BY_TIME_PERIOD_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	3849	3596	-253	104	97	-7	29	27	-2	29	27	-2
AM Hour 8-9	2034	4824	4464	-359	150	139	-11	20	19	-1	20	19	-1
AM Hour 8-9	Total	288109	266917	-21192	10560	9781	-779	815	756	-59	815	756	-59

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE)

EPRC - 60 year

table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2_EMISSIONS_BY_TIME_PERIOD_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM Hour 8-9	2019	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	2034	0	0	0	0	0	0	0	0	0	0	0	0
AM Hour 8-9	Total	0	0	0	0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_pri	Fuel	Non_fuel	PT_fares_pri	Taxes
Road	2019	45146	0	386	-3037	0	-77
Road	2020	45440	0	389	-2990	0	-77
Road	2021	45518	0	392	-2942	0	-78
Road	2022	45571	0	395	-2893	0	-79
Road	2023	45600	0	397	-2844	0	-80
Road	2024	45606	0	400	-2794	0	-81
Road	2025	45589	0	395	-2744	0	-79
Road	2026	45551	0	390	-2693	0	-77
Road	2027	45493	0	384	-2643	0	-75
Road	2028	45416	0	379	-2592	0	-73
Road	2029	45320	0	374	-2541	0	-71
Road	2030	45206	0	368	-2491	0	-69
Road	2031	45076	0	361	-2440	0	-67
Road	2032	44929	0	354	-2390	0	-66
Road	2033	44768	0	346	-2340	0	-64
Road	2034	44592	0	339	-2290	0	-62
Road	2035	43610	0	326	-2202	0	-60
Road	2036	42650	0	314	-2117	0	-57
Road	2037	41711	0	301	-2036	0	-55
Road	2038	40793	0	290	-1957	0	-53
Road	2039	39895	0	279	-1882	0	-51
Road	2040	39017	0	268	-1810	0	-49
Road	2041	38159	0	258	-1740	0	-47
Road	2042	37320	0	248	-1673	0	-45
Road	2043	36499	0	238	-1609	0	-44
Road	2044	35696	0	229	-1547	0	-42
Road	2045	34911	0	220	-1488	0	-40
Road	2046	34144	0	212	-1430	0	-39
Road	2047	33393	0	204	-1375	0	-37
Road	2048	32659	0	196	-1322	0	-36
Road	2049	31942	0	188	-1272	0	-34
Road	2050	31240	0	181	-1223	0	-33
Road	2051	30553	0	174	-1176	0	-32
Road	2052	29882	0	167	-1130	0	-31
Road	2053	29226	0	161	-1087	0	-29
Road	2054	28584	0	155	-1045	0	-28
Road	2055	27956	0	149	-1005	0	-27
Road	2056	27343	0	143	-966	0	-26
Road	2057	26743	0	138	-929	0	-25
Road	2058	26156	0	132	-893	0	-24
Road	2059	25582	0	127	-859	0	-23
Road	2060	25020	0	122	-826	0	-22
Road	2061	24471	0	118	-794	0	-22
Road	2062	23935	0	113	-764	0	-21
Road	2063	23410	0	109	-734	0	-20
Road	2064	22896	0	105	-706	0	-19
Road	2065	22394	0	101	-679	0	-18
Road	2066	21903	0	97	-653	0	-18
Road	2067	21423	0	93	-628	0	-17
Road	2068	20954	0	89	-604	0	-16
Road	2069	20495	0	86	-580	0	-16
Road	2070	20046	0	83	-558	0	-15
Road	2071	19606	0	79	-537	0	-15
Road	2072	19177	0	76	-516	0	-14
Road	2073	18757	0	73	-496	0	-13
Road	2074	18346	0	71	-477	0	-13
Road	2075	17945	0	68	-459	0	-12
Road	2076	17552	0	65	-441	0	-12
Road	2077	17168	0	63	-424	0	-11
Road	2078	16792	0	60	-408	0	-11
Road	2079	17082	0	60	-408	0	-11
Road	Total	1979856	0	13080	-90127	0	-2462

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SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Car	2019	39097	0	353	-3259	0
Car	2034	38280	0	311	-2469	0
LGV	2019	4234	0	24	-43	0
LGV	2034	4426	0	20	-25	0
OGV1	2019	918	0	9	84	0
OGV1	2034	951	0	8	65	0
OGV2	2019	897	0	0	181	0
OGV2	2034	934	0	0	140	0
All	2019	45146	0	386	-3037	0
All	2034	44592	0	339	-2290	0
Car	Total	1695617	0	11995	-97081	0
LGV	Total	198282	0	781	-1041	0
OGV1	Total	43395	0	303	2532	0
OGV2	Total	42561	0	0	5463	0
All	Total	1979855	0	13080	-90127	0

PERSON_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
All	2019	45146	0	386	-3037	0
All	2034	44592	0	339	-2290	0
All	Total	1979855	0	13080	-90127	0

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
Business	2019	11725	0	44	108	0
Business	2034	12272	0	38	117	0
Commuting	2019	24247	0	257	-1572	0
Commuting	2034	22345	0	218	-1054	0
Other	2019	9173	0	85	-1573	0
Other	2034	9975	0	83	-1352	0
Business	Total	558872	0	1470	4277	0
Commuting	Total	990674	0	8462	-42663	0
Other	Total	430310	0	3148	-51740	0

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri
						Taxes
AM Hour 8-9	2019	45146	0	386	-3037	0
AM Hour 8-9	2034	44592	0	339	-2290	0
AM Hour 8-9	Total	1979855	0	13080	-90127	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-0	-11	43	60	173
Car	Business	2034	0	-0	-6	57	80	236
Car	Business	Total	-0	-27	-418	3370	4740	13889
Car	Commuting	2019	-0	-3	-41	234	600	1427
Car	Commuting	2034	-0	-2	-29	271	700	1934
Car	Commuting	Total	-1	-102	-1873	16217	41885	113904
Car	Other	2019	-0	-1	-115	291	260	496
Car	Other	2034	0	-9	-72	491	365	661
Car	Other	Total	-0	-493	-4751	28330	21404	38987
LGV	Business	2019	-0	-0	-7	28	31	48
LGV	Business	2034	0	-1	-4	39	41	66
LGV	Business	Total	-0	-63	-294	2316	2399	3884
LGV	Commuting	2019	-0	-0	-8	32	35	54
LGV	Commuting	2034	0	-1	-5	45	46	75
LGV	Commuting	Total	-0	-72	-335	2636	2730	4421
LGV	Other	2019	-0	-0	-3	11	12	19
LGV	Other	2034	0	-0	-2	15	16	26
LGV	Other	Total	-0	-25	-115	908	941	1523
OGV1	Business	2019	-0	-0	-1	5	10	20
OGV1	Business	2034	-0	-0	-1	7	13	28
OGV1	Business	Total	-1	-7	-67	399	747	1661
OGV1	Commuting	2019	-0	-0	-0	1	3	5

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OGV1	Commuting	2034	-0	-0	-0	2	3	7
OGV1	Commuting	Total	-0	-2	-17	102	191	425
OGV1	Other	2019	-0	-0	-0	1	1	2
OGV1	Other	2034	-0	-0	-0	1	1	3
OGV1	Other	Total	-0	-1	-8	46	85	189
OGV2	Business	2019	-0	-0	-1	5	10	19
OGV2	Business	2034	-0	-0	-1	7	13	27
OGV2	Business	Total	-2	-7	-71	391	763	1606
OGV2	Commuting	2019	-0	-0	-0	1	2	3
OGV2	Commuting	2034	-0	-0	-0	1	2	5
OGV2	Commuting	Total	-0	-1	-12	68	133	279
OGV2	Other	2019	-0	-0	-0	1	1	2
OGV2	Other	2034	-0	-0	-0	1	1	3
OGV2	Other	Total	-0	-1	-7	39	77	161

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-2	-305	1167	1628	4727
Car	Business	2034	0	-10	-127	1169	1647	4830
Car	Business	Total	-0	-406	-7137	53621	75388	220772
Car	Commuting	2019	-1	-28	-432	2437	6245	14855
Car	Commuting	2034	-0	-11	-214	1994	5154	14244
Car	Commuting	Total	-11	-610	-10937	90360	233225	627169
Car	Other	2019	-0	-8	-1093	2753	2461	4693
Car	Other	2034	0	-62	-483	3285	2441	4424
Car	Other	Total	-0	-2301	-25543	139782	106875	195373
LGV	Business	2019	-0	-4	-199	764	838	1297
LGV	Business	2034	0	-24	-91	808	832	1353
LGV	Business	Total	-0	-947	-4977	36745	38192	61666
LGV	Commuting	2019	-0	-2	-87	332	364	564
LGV	Commuting	2034	0	-10	-37	331	341	554
LGV	Commuting	Total	-0	-369	-1988	14477	15059	24300
LGV	Other	2019	-0	-1	-27	104	114	177
LGV	Other	2034	0	-3	-12	104	107	174
LGV	Other	Total	-0	-115	-623	4535	4717	7611
OGV1	Business	2019	-2	-5	-35	146	275	539
OGV1	Business	2034	-0	-2	-22	138	257	580
OGV1	Business	Total	-16	-119	-1105	6377	11936	26322
OGV1	Commuting	2019	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2019	-1	-4	-36	146	263	529
OGV2	Business	2034	-1	-2	-23	134	265	560
OGV2	Business	Total	-30	-119	-1159	6248	12146	25476
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2019	-0	-2	-321	1139	1582	4731
Car	Business	2034	0	-10	-129	1163	1617	4830
Car	Business	Total	-0	-410	-7314	53231	74170	220815
Car	Commuting	2019	-0	-17	256	3912	6112	11485
Car	Commuting	2034	-0	-3	312	3102	5175	11733
Car	Commuting	Total	-3	-296	9714	134038	232980	528152
Car	Other	2019	-0	-4	-587	3188	1627	3091
Car	Other	2034	0	-63	-160	3517	1795	3245
Car	Other	Total	-0	-2334	-12305	149783	81600	148711
LGV	Business	2019	-0	-2	-209	765	815	1293
LGV	Business	2034	0	-24	-95	810	821	1350
LGV	Business	Total	-0	-945	-5149	36803	37702	61537
LGV	Commuting	2019	-0	-2	-87	336	368	569
LGV	Commuting	2034	0	-10	-38	334	343	558
LGV	Commuting	Total	-0	-371	-2001	14586	15168	24453
LGV	Other	2019	-0	-1	-27	105	115	178
LGV	Other	2034	0	-3	-12	105	108	175
LGV	Other	Total	-0	-116	-627	4570	4752	7661

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OGV1	Business	2019	-2	-5	-40	162	299	594
OGV1	Business	2034	-0	-2	-24	150	276	622
OGV1	Business	Total	-13	-108	-1208	6854	12666	27964
OGV1	Commuting	2019	-0	-0	-0	0	0	1
OGV1	Commuting	2034	-0	-0	-0	0	0	1
OGV1	Commuting	Total	-0	-0	-1	8	14	31
OGV1	Other	2019	-0	-0	-0	0	0	0
OGV1	Other	2034	-0	-0	-0	0	0	0
OGV1	Other	Total	-0	-0	-1	4	6	14
OGV2	Business	2019	-1	-5	-45	180	314	634
OGV2	Business	2034	-0	-2	-28	158	305	641
OGV2	Business	Total	-26	-105	-1355	7183	13691	28636
OGV2	Commuting	2019	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	1	18	49	35	20	66	44	32
Car	Business	2034	1	30	69	46	26	89	64	42
Car	Business	Total	38	1713	4026	2733	1546	5243	3763	2492
Car	Commuting	2019	4	318	519	295	151	531	214	184
Car	Commuting	2034	4	396	658	392	185	704	298	238
Car	Commuting	Total	234	23526	39001	23112	11020	41565	17511	14060
Car	Other	2019	4	133	211	119	68	178	158	60
Car	Other	2034	8	246	311	177	98	279	241	74
Car	Other	Total	447	14083	18179	10350	5759	16211	14054	4393
LGV	Business	2019	1	19	23	9	5	16	16	10
LGV	Business	2034	1	30	34	13	7	22	22	12
LGV	Business	Total	59	1728	1967	763	426	1285	1289	724
LGV	Commuting	2019	1	22	26	11	6	18	18	11
LGV	Commuting	2034	1	34	38	15	8	25	25	14
LGV	Commuting	Total	67	1967	2239	869	485	1462	1467	824
LGV	Other	2019	0	7	9	4	2	6	6	4
LGV	Other	2034	0	12	13	5	3	9	9	5
LGV	Other	Total	23	678	771	299	167	504	505	284
OGV1	Business	2019	0	5	7	2	1	4	2	12
OGV1	Business	2034	0	7	10	3	1	5	3	16
OGV1	Business	Total	1	401	613	181	75	312	198	951
OGV1	Commuting	2019	0	1	2	1	0	1	1	3
OGV1	Commuting	2034	0	2	3	1	0	1	1	4
OGV1	Commuting	Total	0	103	157	46	19	80	51	243
OGV1	Other	2019	0	1	1	0	0	0	0	1
OGV1	Other	2034	0	1	1	0	0	1	0	2
OGV1	Other	Total	0	46	70	21	9	36	23	108
OGV2	Business	2019	0	5	7	2	1	4	2	12
OGV2	Business	2034	0	7	11	3	1	5	3	16
OGV2	Business	Total	1	401	618	164	72	303	191	930
OGV2	Commuting	2019	0	1	1	0	0	1	0	2
OGV2	Commuting	2034	0	1	2	0	0	1	1	3
OGV2	Commuting	Total	0	70	107	29	13	53	33	161
OGV2	Other	2019	0	0	1	0	0	0	0	1
OGV2	Other	2034	0	1	1	0	0	1	0	2
OGV2	Other	Total	0	40	62	16	7	30	19	93

MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	497	1344	952	556	1787	1186	878
Car	Business	2034	13	606	1403	948	534	1823	1319	863
Car	Business	Total	608	26979	63916	43505	24667	83337	59532	39693
Car	Commuting	2019	44	3309	5403	3073	1574	5532	2228	1913
Car	Commuting	2034	28	2916	4843	2884	1363	5186	2196	1750
Car	Commuting	Total	1332	130339	215797	127449	61134	229233	96230	77680
Car	Other	2019	42	1262	1995	1123	640	1681	1493	569
Car	Other	2034	52	1644	2084	1188	659	1869	1616	494
Car	Other	Total	2200	69131	90459	51456	28685	80338	69766	22150
LGV	Business	2019	20	516	615	254	148	438	440	263
LGV	Business	2034	21	609	690	266	148	447	448	250
LGV	Business	Total	939	27253	31104	12114	6788	20425	20490	11565
LGV	Commuting	2019	9	224	268	110	64	191	191	115
LGV	Commuting	2034	8	249	283	109	61	183	183	102

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LGV	Commuting	Total	370	10723	12245	4773	2676	8051	8077	4563
LGV	Other	2019	3	70	84	35	20	60	60	36
LGV	Other	2034	3	78	89	34	19	57	57	32
LGV	Other	Total	116	3359	3836	1495	838	2522	2530	1429
OGV1	Business	2019	0	131	197	58	24	111	67	330
OGV1	Business	2034	0	140	215	64	26	108	69	330
OGV1	Business	Total	16	6357	9714	2870	1187	4971	3144	15135
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2019	0	134	189	54	24	107	63	327
OGV2	Business	2034	0	140	217	57	25	105	67	322
OGV2	Business	Total	16	6372	9765	2606	1142	4821	3029	14809
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 15 kms	15 to 20 kms	20 to 50 kms	50 to 100 kms	>100 kms
Car	Business	2019	14	500	1327	935	548	1759	1168	877
Car	Business	2034	13	610	1396	938	531	1809	1311	862
Car	Business	Total	613	27131	63597	43085	24500	82745	59149	39672
Car	Commuting	2019	49	3717	5638	2872	1648	4591	1359	1874
Car	Commuting	2034	31	3219	4978	2704	1411	4681	1577	1719
Car	Commuting	Total	1479	142311	221491	120631	63076	207547	71552	76497
Car	Other	2019	47	1374	1798	943	594	852	1131	575
Car	Other	2034	57	1742	1933	1039	617	1085	1363	497
Car	Other	Total	2394	72868	84562	45722	27080	50926	59640	22261
LGV	Business	2019	21	521	612	243	142	425	433	265
LGV	Business	2034	21	616	689	259	144	437	445	251
LGV	Business	Total	949	27498	31050	11836	6633	20035	20354	11591
LGV	Commuting	2019	9	227	271	112	65	192	193	115
LGV	Commuting	2034	8	252	285	110	61	184	184	103
LGV	Commuting	Total	373	10813	12348	4813	2698	8101	8111	4578
LGV	Other	2019	3	71	85	35	20	60	60	36
LGV	Other	2034	3	79	89	34	19	58	58	32
LGV	Other	Total	117	3388	3869	1508	845	2538	2541	1434
OGV1	Business	2019	0	151	219	62	27	120	72	358
OGV1	Business	2034	0	155	232	68	28	115	73	351
OGV1	Business	Total	17	6953	10402	3027	1251	5235	3306	15963
OGV1	Commuting	2019	0	0	0	0	0	0	0	0
OGV1	Commuting	2034	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	10	16	5	2	7	3	10
OGV1	Other	2019	0	0	0	0	0	0	0	0
OGV1	Other	2034	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	4	7	2	1	3	1	4
OGV2	Business	2019	0	173	232	63	28	125	74	383
OGV2	Business	2034	0	169	252	65	28	118	75	366
OGV2	Business	Total	18	7527	11113	2887	1266	5339	3371	16506
OGV2	Commuting	2019	0	0	0	0	0	0	0	0
OGV2	Commuting	2034	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2019	0	0	0	0	0	0	0	0
OGV2	Other	2034	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Mode	Modelled Years	
	2019	2034
Road	3.49%	4.48%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road	Bus
Travel Time	990674	990674	0
Vehicle operating costs	-34202	-34202	0
User charges	0	0	0
During Construction & Maintenance	0	0	0

EPRC - 60 year

NET CONSUMER - COMMUTING BENEFITS	956472	956472	0
Consumer - Other user benefits	All Modes	Road	Bus
Travel Time	430310	430310	0
Vehicle operating costs	-48593	-48593	0
User charges	0	0	0
During Construction & Maintenance	0	0	0
NET CONSUMER - OTHER BENEFITS	381717	381717	0

Business	All Modes	Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	558872	472916	85956	0	0
Vehicle operating costs	5747	-2476	8223	0	0
User charges	0	0	0	0	0
During Construction & Maintenance	0	0	0	0	0
Subtotal	564619	470439	94179	0	0

Private Sector Provider Impacts					
Revenue	0	0	0	0	0
Operating costs	0	0	0	0	0
Investment costs	0	0	0	0	0
Grant/subsidy	0	0	0	0	0
Subtotal	0	0	0	0	0

Other business Impacts					
Developer contributions	0	0	0	0	0
NET BUSINESS IMPACT	564619				

TOTAL
Present Value of Transport Economic
Efficiency Benefits (TEE) 1902808

Note: Benefits appear as positive numbers, while costs appear as negative numbers.
Note: All entries are present values discounted to 2009, in 2009 prices

Public Accounts			
Local Government Funding	ALL MODES	Road	Bus
Revenue	0	0	0
Operating Costs	0	0	0
Investment Costs	0	0	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	0	0	0

Central Government Funding: Transport	ALL MODES	Road	Bus
Revenue	0	0	0
Operating costs	27604	27604	0
Investment costs	432773	432773	0
Developer Contributions	0	0	0
Grant/Subsidy Payments	0	0	0
NET IMPACT	460376	460376	0

Central Government Funding: Non-Transport			
Indirect Tax Revenues	2462	2462	0

TOTALS			
Broad Transport Budget	460376	460376	0
Wider Public Finances	2462	2462	0

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.
Note: All entries are present values discounted to 2009, in 2009 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	59
Economic Efficiency: Consumer Users (Commuting)	956472
Economic Efficiency: Consumer Users (Other)	381717
Economic Efficiency: Business Users and Providers	564619
Wider Public Finances (Indirect Taxation Revenues)	-2462
Present Value of Benefits (PVB)	1900405
Broad Transport Budget	460376
Present Value of Costs (PVC)	460376

OVERALL IMPACTS

EPRC - 60 year

Net Present Value (NPV)	1440029
Benefit to Cost Ratio (BCR)	4.128

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information
- calculations completed

File Summary
- Scheme File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\SCHEME_EPRC_V2 60.txt
- Economic File : C:\Artitz\GCOB\TUBA\Inputs\Parameter files\NRA_Economic_1.9.txt
- Output File : C:\Artitz\GCOB\TUBA\Outputs\EPRC_60.OUT

Elapsed time :



In the UK & Ireland, SYSTRA provides Transport Planning consultancy and Rail and Urban Transport engineering services. We work with our clients to think through complex issues concerning the location and movement of people, goods and services – as well as helping them maximise the potential of their own businesses. We have been providing Transport Consultancy services for over 40 years and have an excellent reputation for the provision of high quality, robust and independent advice to our clients. SYSTRA Ltd is a UK registered subsidiary of SYSTRA Group.

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