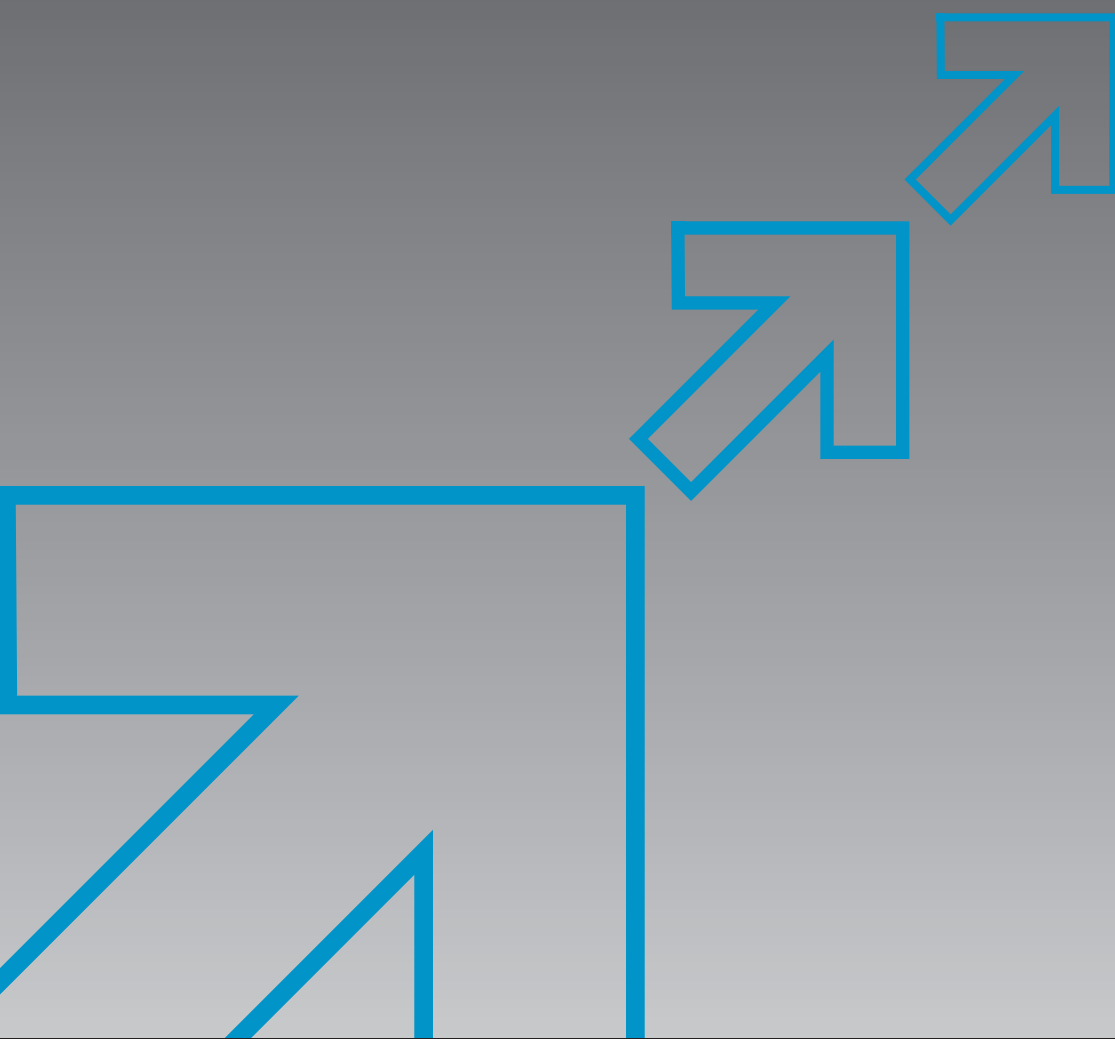


A SUSTAINABLE JOURNEY TO WORK IN SOUTH YORKSHIRE

ANNEX 9: USER'S GUIDE TO
TECHNICAL FOLDERS



SHEFFIELD
City Region



SOUTH YORKSHIRE
INTEGRATED TRANSPORT
AUTHORITY

CONTENTS

1.	Introduction.....	2
1.1.	The Annex Documents.....	2
1.2.	This Document.....	2
2.	Folder A -Walking and Cycling analysis.....	3
2.1.	Introduction.....	3
2.2.	Cycling spreadsheet model.....	3
2.3.	Cycling and walking benefits discounting.....	4
3.	Folder B - Greenhouse Gases Analysis.....	5
3.1.	Introduction.....	5
3.2.	CO2 model.....	5
3.3.	Carbon benefits discounting.....	5
4.	Folder C - Air Quality Analysis.....	6
4.1.	Introduction.....	6
4.2.	Air quality model_strategy level.....	6
4.3.	Air quality valuation.....	6
5.	Folder D - Noise Benefits Analysis.....	7
5.1.	Introduction.....	7
5.2.	Noise assessment.....	7
6.	Folder E - GVA Analysis.....	8
6.1.	Introduction.....	8
6.2.	UDM analysis.....	8
6.3.	LSTF GVA Analysis.....	8
6.4.	GVA deflation.....	9
6.5.	GVA discounting.....	9
7.	Folder F - Annualisation Factors.....	10
7.1.	Introduction.....	10
7.2.	Annualisationcalcs.....	10
8.	Folder G - Scheme Costs.....	11
8.1.	Introduction.....	11
8.2.	Scheme Costs.....	11
9.	Folder H - Risk Assessment.....	13
9.1.	Introduction.....	13
9.2.	Risk Register without Inflation.....	13
10.	Folder I - TUBA and COBA input and output files.....	14
10.1.	Introduction.....	14
10.2.	COBA input and output files.....	14
10.3.	COBA results processing and analysis.....	14
10.4.	TUBA input and output files.....	15
11.	Folder J - Appraisal Tables.....	16
11.1.	Introduction.....	16
11.2.	Appraisal summary Tables.....	16
11.3.	Transport Economic Efficiency Tables.....	16
11.4.	Public Accounts Tables.....	17
11.5.	Analysis of Monetised Costs and Benefits Tables.....	17
12.	Folder K - Economic Parameters.....	18
12.1.	Introduction.....	18
12.2.	Economic Parameters SYSTM+ (WebTAG 3.5.6 - Apr 2011).....	18

1. INTRODUCTION

1.1. THE ANNEX DOCUMENTS

This document forms part of the series of Annex documents, which are presented here as an Annex to our Local Sustainable Transport Fund (LSTF) Business Case. This series of documents presents a substantial body of evidence we have compiled while developing the Business Case, which is the final submission to the Department for Transport, following our successful “key component” bid.

1.2. THIS DOCUMENT

This document presents a brief use guide to those reviewing the spreadsheets developed for the appraisal of our LSTF Programme. This document is strongly linked to the Economic Case chapter of the main Business Case documents and also the Value for Money Analysis Report (Annex 8). All the spreadsheets described in this document are included in the attached CD.

The annex is structured as follows:

- Chapter 2: Folder A -Walking and cycling analysis
- Chapter 3: Folder B - Greenhouse gases analysis
- Chapter 4: Folder C -Air quality analysis
- Chapter 5: Folder D - Noise benefit analysis
- Chapter 6: Folder E - GVA analysis
- Chapter 7: Folder F - Annualisation factors
- Chapter 8: Folder G - Scheme costs
- Chapter 9: Folder H - Risk assessment
- Chapter 10: Folder I -TUBA and COBA input/output files
- Chapter 11: Folder J -Appraisal tables
- Chapter 12: Folder K -Economic parameters

2. FOLDER A -WALKING AND CYCLING ANALYSIS

2.1. INTRODUCTION

This chapter of the annex provides a user guide to the Folder A on the attached CD which contains spreadsheets that perform the walking and cycling analysis. This folder includes the following spreadsheets:

- Cycling Spreadsheet Model
- Cycling and Walking Benefits Discounting

2.2. CYCLING SPREADSHEET MODEL

This model has been used to:

- calculate physical fitness benefits for cyclists and pedestrians
- calculate journey ambience benefits for new cycle parking and cycle routes
- calculate absenteeism benefits for cyclists and pedestrians and
- calculate accident disbenefits for cyclists.

This spreadsheet contains the following worksheets:

Figure 2.1 Purpose of worksheets – Cycling Spreadsheet Model

Sheet	Purpose
Top Slice Information	This worksheet displays the trips removed from the SYSTM+ highway matrices to account for cycling and walking schemes. The figures are presented by time period, for 2015 and 2026. The figures are annualised for each project corridor using the same annualisation factors as used in TUBA.
Summary of Benefits	This worksheet summarises the calculations undertaken for the 60 year appraisal period ready for discounting.
Physical Fitness New Cyclists	This worksheet calculates physical fitness benefits for cyclists using the methodology outlined in Section 1.10 of WebTAG Unit 3.14.1
Physical Fitness New Walkers	This worksheet calculates physical fitness benefits for pedestrians using the methodology outlined in Section 1.10 of WebTAG Unit 3.14.1
Journey Ambience - Parking	This worksheet calculates journey ambience benefits associated with the provision of cycle parking using the methodology outlined in Section 1.9 of WebTAG Unit 3.14.1
Journey Ambience - Cycle Routes	This worksheet calculates journey ambience benefits associated with the provision of cycle routes using the methodology outlined in Section 1.9 of WebTAG Unit 3.14.1
Absenteeism Cyclists	This worksheet calculates absenteeism benefits for new pedestrians using the methodology outlined in WebTAG Unit 3.14.1
Absenteeism Walkers	This worksheet calculates absenteeism benefits for new cyclists using the methodology outlined in WebTAG Unit 3.14.1
Accidents	This worksheet calculates and values the number of additional cycle accidents likely to occur as a result of the LSTF Programme
VOT and VOT Growth	This worksheet outlines Values of Time and Values of Time Growth as taken from WebTAG Unit 3.5.6
Casualty Values	This worksheet outlines the value of different casualties and the value of a life (including how these change over time in line with GDP growth per capita)
Absenteeism VOT Growth Non Work	This worksheet outlines the value of absenteeism per day and how this grows over time in line with Value of Time Growth (non work) as taken from WebTAG Unit 3.5.6

2.3. CYCLING AND WALKING BENEFITS DISCOUNTING

This spreadsheet has been used to discount the benefits calculated for walking and cycling including physical fitness, journey ambience, absenteeism and accidents.

This spreadsheet contains the following worksheets:

Figure 2.2 Purpose of worksheets – Cycling and Walking Benefits Discounting

Sheet	Purpose
Summary	This worksheet summarises the 60 year appraisal of walking and cycling benefits (disbenefits) including physical fitness, journey ambience, absenteeism and accidents.
Physical Fitness Cyclists	This worksheet summarises the benefits (£) relating to physical fitness for cyclists for the 60 year appraisal period and then discounts them to 2002.
Physical Fitness Walkers	This worksheet summarises the benefits (£) relating to physical fitness for pedestrians for the 60 year appraisal period and then discounts them to 2002.
Journey Ambience Cycle Parking	This worksheet summarises the journey ambience benefits (£) related to the provision of cycle parking for the 60 year appraisal period and then discounts them to 2002.
Journey Ambience Cycle Routes	This worksheet summarises the journey ambience benefits (£) related to the provision of cycle routes for the 60 year appraisal period and then discounts them to 2002.
Absenteeism Cyclists	This worksheet summarises the absenteeism benefits (£) for cyclists for the 60 year appraisal period and then discounts them to 2002.
Absenteeism Walkers	This worksheet summarises the absenteeism benefits (£) for pedestrians for the 60 year appraisal period and then discounts them to 2002.
Accidents	This worksheet summarises the total cycle accident dibenefits (£) for the 60 year appraisal period and then discounts them to 2002.
Fatal	This worksheet summarises the fatal cycle accident dibenefits (£) for the 60 year appraisal period and then discounts them to 2002.
Serious	This worksheet summarises the serious cycle accident dibenefits (£) for the 60 year appraisal period and then discounts them to 2002.
Slight	This worksheet summarises the slight cycle accident dibenefits (£) for the 60 year appraisal period and then discounts them to 2002.
Discounting Assumptions	This worksheet outlines the discounting assumptions utilised.

3. FOLDER B - GREENHOUSE GASES ANALYSIS

3.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder B on the attached CD which contains the spreadsheets to perform the greenhouse gas analysis for those schemes not modelled in SYSTM+. This folder includes the following spreadsheets:

- CO2 Model
- Carbon Benefits Discounting

3.2. CO2 MODEL

This model has been used to calculate carbon savings of the following schemes which were not modelled in SYSTM+:

- Eco Academy - Eco Stars (BEST1),
- Eco Academy - Transport Academy (BEST1),
- Plugged in South Yorkshire (BARN3, DEAR6, DONV7, DONC5).

This spreadsheet contains the following worksheets:

Figure 3.1 Purpose of worksheets – CO2 Model

Sheet	Purpose
2015 Basic Calculations	Assuming available evidence this worksheet calculates carbon savings for the three schemes for 2015.
Eco Academy - Eco Stars	This worksheet calculates the carbon savings over the 60 year appraisal period for the Eco Academy: Eco Stars scheme assuming a reduction in the savings over time to 2026.
Eco Academy - Transport Academy	This worksheet calculates the carbon savings over the 60 year appraisal period for the Eco Academy: Transport Academy scheme assuming a reduction in the savings over time to 2026.
Plugged in South Yorkshire	This worksheet calculates the carbon savings over the 60 year appraisal period for the Plugged In South Yorkshire scheme assuming a reduction in the savings over time to 2026.
WebTAG Information Sources	This worksheet summarises WebTAG values used in the assessment

3.3. CARBON BENEFITS DISCOUNTING

This spreadsheet has been used to discount the value of carbon savings calculated in the bespoke CO2 model. This spreadsheet contains the following worksheets:

Figure 3.2 Purpose of worksheets – Carbon Benefits Discounting

Sheet	Purpose
Summary	This worksheet summarises the 60 year appraisal of carbon savings for Eco Academy - Eco Stars, Eco Academy- Transport Academy and Plugged in South Yorkshire schemes
Eco Academy: Eco Stars	This worksheet discounts the carbon savings for Eco Academy - Eco Stars scheme
Eco Academy: Transport Academy	This worksheet discounts the carbon savings for Eco Academy - Transport Academy scheme
Plugged in South Yorkshire	This worksheet discounts the carbon savings for Plugged in South Yorkshire scheme
Discounting Assumptions	This worksheet outlines the discounting assumptions utilised.

4. FOLDER C - AIR QUALITY ANALYSIS

4.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder C on the attached CD which contains the spreadsheets to perform the air quality analysis. This folder includes the following spreadsheets:

- Air Quality Model _Strategy Level
- Air Quality Valuation

4.2. AIR QUALITY MODEL_STRATEGY LEVEL

This spreadsheet has been used to estimate NOx emissions at the strategy level. This model contains the following worksheets:

Figure 4.1 Purpose of worksheets – Air Quality Model

Sheet	Purpose
Bespoke Analysis 1	This worksheet records the Do Minimum outputs of the DMRB 2007 Regional Spreadsheet for three schemes not included in the SYSTM+ (Eco Academy: Eco Stars, Eco Academy: Transport Academy, Plugged in South Yorkshire)
Bespoke Analysis 2	This worksheet calculates the DS impact with the LSTF programme for the 60 year appraisal period
SYSTM+ Outputs	This worksheet summarises the NOx emissions from the SYSTM+ Models.
Summary for Valuation	This worksheet combines the bespoke analysis with the outputs from the SYSTM+ models
Local Worksheet	This sheet completes the local air quality worksheet
Regional Worksheet	This sheet completes the regional air quality worksheet

4.3. AIR QUALITY VALUATION

This spreadsheet has been used to value the reduction in NOx emissions. It is based on the worksheet provided in WebTAG Unit 3.3.3c.

This spreadsheet contains the following worksheets:

Figure 4.2 Purpose of worksheets – Air Quality Valuation

Sheet	Purpose
Air Quality Summary Worksheet	This provides a summary of the valuation of NOx emissions for the appraisal period.
NOx Worksheet	This worksheet provides the inputs to the calculations taken from the Air Quality model
NOx values	This worksheet summarise the monetary values of NOx
NPV Calculation - NOX	This worksheet undertakes the NPV calculations for NOx

5. FOLDER D - NOISE BENEFITS ANALYSIS

5.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder D on the attached CD which includes the spreadsheet to perform the noise benefits analysis. This folder includes the following spreadsheet "Noise Assessment".

5.2. NOISE ASSESSMENT

This spreadsheet has been used to calculate noise levels for the Key Component (Do Minimum) and LSTF Programme (Do Something). This spreadsheet contains the following worksheets:

Figure 5.1 Purpose of worksheets – Noise Assessment

Sheet	Purpose
Key Component 2015 AM	Calculation of noise levels for Key Component (Do Minimum) 2015 AM
Key Component 2026 AM	Calculation of noise levels for Key Component (Do Minimum) 2026 AM
LSTF Programme 2015 AM	Calculation of noise levels for LSTF Programme (Do Something) 2015 AM
LSTF Programme 2026 AM	Calculation of noise levels for LSTF Programme (Do Something) 2015 AM
Summary	This sheet compares the results of the Key Component and LSTF Programme for 2015 and 2026.

6. FOLDER E - GVA ANALYSIS

6.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder E on the attached CD which contains the spreadsheets that perform the GVA analysis. This folder includes the following spreadsheets:

- UDM Analysis
- LSTF GVA Analysis
- GVA Deflation
- GVA Discounting

6.2. UDM ANALYSIS

This spreadsheet has been used to calculate adjustments to the previous UDM model runs for use in our bespoke GVA analysis. This spreadsheet contains the following worksheets:

Figure 6.1 Purpose of worksheets – UDM Analysis

Sheet	
Reduction Factors	This worksheet illustrates how adjustment factors have been calculated taking into account the differing versions of TEMPRO and levels of investment between the Initial Proposal and the MSBC
Corridor Analysis	This sheet summarises the UDM results for the Initial Proposal for the relevant zones and adjusts according to the factors calculated in the "Reduction Factors" worksheet
Corridor Job Valuation LSTF	The number of jobs calculated to be generated by the LSTF programme in the "Corridor Analysis" worksheet have been valued in this worksheet.
Summary Tables	Summary of the calculations in the preceding worksheets.

6.3. LSTF GVA ANALYSIS

This spreadsheet has been used to calculate the programme spend impact of all schemes and GVA impact of the Waterfront Regeneration and Adwick Sustainable Access schemes. This spreadsheet contains the following worksheets:

Figure 6.2 Purpose of worksheets – LSTFGVAAnalysis

Sheet	Purpose
Calculation Spreadsheet	This worksheet undertakes the calculations to estimate the programme spend impact and the post implementation GVA impact of the Waterfront Regeneration and Adwick Sustainable Access schemes.
Summary Sheet	This worksheet provides a summary of the results ready for deflation and discounting.

6.4. GVA DEFLATION

This spreadsheet has been used to deflate the calculated GVA benefits. This spreadsheet contains the following worksheets:

Figure 6.3 Purpose of worksheets – GVA Deflation

Sheet	Purpose
LSTF GVA Deflation	This worksheet lists the GVA benefits calculated by year and then deflates to 2002 prices for the appraisal period.

6.5. GVA DISCOUNTING

This spreadsheet has been used discount the total benefits achieved from the GVA analysis following their deflation. This spreadsheet contains the following worksheets:

Figure 6.4 Purpose of worksheets – GVA Discounting

Sheet	Purpose
GDP Analysis LSTF	This worksheet discounts the GVA benefits for the 60 year appraisal period.
Discounting Assumptions	This worksheet outlines the discounting assumptions utilised.

7. FOLDER F - ANNUALISATION FACTORS

7.1. INTRODUCTION

This chapter of the annex provides a user guide to the spreadsheets performing the analysis to calculate the annualisation factors for TUBA and other appraisal methods. This analysis includes the spreadsheet "AnnualisationCalcs".

7.2. ANNUALISATIONCALCS

This spreadsheet contains the calculations made for the derivation of annualisation factors. There are three sections to this workbook as denoted by the worksheet tab colours as given below:

- RED - Data and calculations for the calculation of weekday peak period annualisation factors
- YELLOW - Data and calculations for the calculation of Highway weekend annualisation factors
- GREEN - Data and calculations for the calculation of Public Transport weekend annualisation factors

This spreadsheet contains the following worksheets:

Figure 7.1 Purpose of worksheets – AnnualisationCalcs

Sheet	Purpose
Weekday Peak Period Calcs	Start of highway weekday peak period annualisation calcs sheets
Calibration Counts	Database of "Calibration" counts used in the development of the SYSTM+ highway model.
Validation Counts	Database of "Validation" counts used in the development of the SYSTM+ highway model.
Peak Period Annualisation Calcs	Details of final weekday peak period calculations
HW weekend calcs	Start of highway weekend annualisation calcs sheets
xxxxxx.xls	Details of counts at a number of individual count sites in Sheffield/Rotherham/Don Valley area. This data was provided by Sheffield City Council and is for 2010
Summary	Summary of counts and calculation for derivation of weekend annualisation factors.
PT weekend calcs	Start of PT weekend annualisation calcs.
Data and Summary	Detailed bus and tram passenger data and annualisation calculations.

8. FOLDER G - SCHEME COSTS

8.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder G which contains the spreadsheet that performs the analysis to calculate the scheme appraisal costs. This analysis includes the following spreadsheet "Scheme Costs".

8.2. SCHEME COSTS

This spreadsheet has been used to convert the project and maintenance costs into a suitable format for inputting into TUBA. This spreadsheet contains the following worksheets:

Figure 8.1 Purpose of worksheets – Scheme Costs

Sheet	Purpose
Scheme Costs and Risk Value	Summary of LSTF and local contribution cost by scheme.
Summary Sheet	Summary of cost per year by mode and sensitivity test. The inputs for this sheet are sourced from the scheme tabs.
TUBA Dmin Inputs	TUBA inputs for the Do minimum scenario. This contains cost that would have to be incurred if LSTF funding is not made available.
TUBA Dsomething Inputs	TUBA inputs for the Do something scenario. This includes the central case and three sensitivity tests.
Key Bus Routes	Profile for Woodhouse to Sheffield and Parkgate Key Bus Routes and Targetted Corridor Enhancements (Bus element). This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Elsecar Park and Ride	Profile for Elsecar Park and Ride. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Development of Cycle Routes	Profile for all cycle routes. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Cycleboost infrastructure	Profile for infrastructure elements of Cycleboost. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Malin Bridge and Tram Stop Upgrades	Profile for Jobconnector Malin Bridge and Don Valley Tram Stop Upgrades. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Targetted Corridor Enhancements	Profile for Targetted Corridor Enhancements (road element). This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Waterfront and Adwick Sustainable Access	Profile for Waterfront Regeneration and Awick Sustainable Access. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Plugged in	Profile for Plugged in South Yorkshire. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
X19 Wentworth to Shortwood rev	Profile for Job connector X19 and Jobconnector Wentworth to Shortwood. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.

Busboost revenue	Profile for Busboost. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Revenue other scheme	Profile for Marketing and Communications, Travel Training, Walkboost and Cycleboost (except the infrastructure elements). This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
ECO Academy Bus	Profile for ECO Academy (bus elements). This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
ECO Academy other	Profile for ECO Academy remainder. This includes the cost profile (LSTF and local contribution), risk value proportioned across the financial contributors and the cost profile by central case and sensitivity test.
Maintenance Summary	Summarises the maintenance costs by year with and without the scheme. The with scheme cost feeds into the TUBA Do Something scenario and the without scheme feeds into the TUBA Do Minimum scenario.
Maintenance by scheme	The amount of money required for maintenance with and without the scheme in place by year.

9. FOLDER H - RISK ASSESSMENT

9.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder H which includes the spreadsheet related to the risk register. This analysis includes the following spreadsheet "Risk Register without inflation".

9.2. RISK REGISTER WITHOUT INFLATION

This spreadsheet contains the calculation of risk by scheme (based upon scheme costs without inflation). The process for the assessment of each risk is to identify the effects of its occurrence together with the likelihood of the occurrence being realised.

The financial impact of each risk can be analysed by estimating the most likely cost outcome associated with the risk, together with an estimate of the range of possible costs, to carry out a quantitative analysis of the risks.

The generic risk listed at the top of each infrastructure, service and BEST tab contains the total value of the risks that are apparent in all schemes. The value calculated for the generic risk is proportionate to the total cost of the schemes within the infrastructure, service and BEST activities. This value has then been apportioned across the schemes in Scheme Costs (discussed in Chapter 8).

This spreadsheet contains the following worksheets:

Figure 9.1 Purpose of worksheets – Risk register without inflation

Sheet	Purpose
Summary of package + risk value	This tab summaries the following tabs, containing the calculation of risk
Costs without inflation	Presentation of the base costs of the schemes
Infrastructure	Risks identified for the infrastructure schemes.
Service	Risks identified for the service schemes.
Best	Risks identified for the BEST schemes.
Calculation	Calculation for impact and likelihood of risk occurring

10. FOLDER I - TUBA AND COBA INPUT AND OUTPUT FILES

10.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder I which contains the TUBA and COBA input and output files and COBA results processing spreadsheet. This chapter includes the following files:

- COBA input and output files
- COBA results processing and analysis (spreadsheet)
- TUBA input and output files

10.2. COBA INPUT AND OUTPUT FILES

COBA assessments are carried out separately for the Do-Minimum and Do-Something scenarios with the results extracted and analysed in a spreadsheet (COBA results analysis). The “pure” COBA input and output files are as follows:

- **Do Minimum (i.e. Key Component scenario)**

Input:

KC_2015_v2.dat
KC_2026_224.dat

Output

KC_2015_V2.prn
KC_2026_224.prn

- **Full Programme (i.e. Preferred Option)**

Input

PA_2015_v2.dat
PA_2026_324.dat

Output

PA_2015_V2.prn
PA_2026_324.prn

10.3. COBA RESULTS PROCESSING AND ANALYSIS

COBA results are processed and analysed in the spreadsheet contained in “COBA RESULTS ANALYSIS.zip”. This spreadsheet undertakes the following tasks:

- Assigns each link in the COBA outputs to the correct priority corridor.
- Sums accident numbers and costs for all links within each priority corridor.
- Compares the DM and DS accident costs and numbers for each priority corridor.
- Converts results into an overall benefit stream and total benefit for the full appraisal period.

The spreadsheet in “COBA RESULTS ANALYSIS.zip” contains the following worksheets:

Figure 10.1 Purpose of worksheets – COBA results analysis

Sheet	Purpose
Assumptions 1	Basic assumptions concerning the processing of COBA output results.
Benefit Stream	Final stream of results year by year throughout the appraisal period. Fundamental accident numbers and costs information extracted from PIVOT sheet in discounted form for 2015 and 2026. This information is "undiscounted" for each year and then used to create a simple stream of benefits for the entire appraisal period which is then discounted and summed to provide full discounted benefits for 2015 - 2074 in the correct 2002 price base.
PIVOT	Comparisons of accident numbers and costs for 2015 and 2026 at individual corridor level. These pivot tables are fed from the Detailed Results sheets below.
DetailedResults_Base2015	COBA outputs for appropriate scenario. This is formed from link by link COBA outputs with a simple lookup to assign each link to the appropriate Priority Corridor. Accident numbers and costs information is then used to feed into the tables in the PIVOT sheet.
DetailedResults_KC2015	
DetailedResults_FP2015	
DetailedResults_Base2026	
DetailedResults_KC2026	
DetailedResults_FP2026	
SECTOR LOOKUPS	Target sheet for lookups used in the detailed results sheets.

10.4. TUBA INPUT AND OUTPUT FILES

The TUBA input and output files are as follows:

- **Highway Preferred option**

Scheme file: HW_FULL_PROGRAMME.txt

Output file: HW_FULL_PROGRAMME.OUT

- **Public Transport Preferred option**

Scheme file: PT_FULL_PROGRAMME.txt

Output file: PT_FULL_PROGRAMME.OUT

- **Cost Calculation Run: Central**

Scheme file: COST_RUN_PA_CC.txt

Output file: COST_RUN_PA_CC.OUT

The cost calculation run was performed "standalone" with identical input matrices used for the DM and DS scenarios to allow production of the appraisal tables (discussed in next chapters) that take into account scheme costs only.

- **Economic File**

std_economics_1.8_Apr11_LSTF.txt

Modified version of the standard economic file and used for both Highway and Public Transport runs.

11. FOLDER J - APPRAISAL TABLES

11.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder J which contains the appraisal tables in spreadsheet form. This folder includes the following spreadsheets:

- Appraisal Summary Tables
- Transport Economic Efficiency Tables
- Public Accounts Tables
- Analysis of Monetised Costs and Benefits Tables

The AST is provided for the preferred option only while the Transport Economic Efficiency Tables, Public Accounts Tables and Analysis of Monetised Costs and Benefits Tables are provided for all options and sensitivity tests.

11.2. APPRAISAL SUMMARY TABLES

This spreadsheet has been used to show the Appraisal Summary Table (AST) of our preferred option. The AST includes both qualitative and quantitative information. The spreadsheet contains the following worksheets:

Figure 11.1 Purpose of worksheets – Appraisal summary tables

Sheet	Purpose
Preferred Option	This worksheet displays AST to present all the main impacts of our preferred option. For our preferred option, we provide detailed justification in the Strategic Case and for which GVA impacts and other benefits are estimated

11.3. TRANSPORT ECONOMIC EFFICIENCY TABLES

This spreadsheet has been used to show the Economic Efficiency of the Transport System (TEE) tables related to our preferred option, Low Cost option and sensitivity tests.

The TEE tables present the net user benefits disaggregated by trip purpose (i.e. Business, including transport operators on the one hand, and Non-business, split into "Commuting" and "Other" trip purposes, on the other), by mode of transport and by impact (time, vehicle operating costs, etc). All the impacts in the TEE table are expressed in money terms.

This spreadsheet contains the following worksheets:

Figure 11.2 Purpose of worksheets – TEE tables

Sheet	Purpose
Preferred Option	This worksheet displays the TEE table of our preferred option. For our preferred option, we provide detailed justification in the Strategic Case and for which GVA impacts and other benefits are estimated
Low Cost Option	This worksheet displays the TEE table of an option which includes a subset of the schemes in the LSTF programme
Sensitivity Test 1: Low Demand Growth	This worksheet displays the TEE table of a test which examines the impact of assuming lower level of growth in the demand for transport
Sensitivity Test 2: High Demand Growth	This worksheet displays the TEE table of a test which examines the impact of assuming higher level of growth in the demand for transport
Sensitivity Test 3a: Underestimate Benefits in Don Valley Corridor	This worksheet displays the TEE table of a test which examines the impact of the uncertainty around the model fit by underestimating benefits in Don Valley Corridor
Sensitivity Test 3b: Overestimate Benefits in Don Valley Corridor	This worksheet displays the TEE table of a test which examines the impact of the uncertainty around the model fit by overestimating benefits in Don Valley Corridor
Sensitivity Test 4a: Optimism Bias - Low	This worksheet displays the TEE table of a test which investigates the impact of the lower end of uncertainty around scheme costs
Sensitivity Test 4b: Optimism Bias - Mid	This worksheet displays the TEE table of a test which investigates the impact of the middle point of uncertainty around scheme costs
Sensitivity Test 4c: Optimism Bias - High	This worksheet displays the TEE table of a test which investigates the impact of the higher end of uncertainty around scheme costs

11.4. PUBLIC ACCOUNTS TABLES

This workbook has been used to show the Public Accounts (PA) tables related to our preferred option, Low Cost option and sensitivity tests.

The PA tables calculate the impact on the Broad Transport Budget and on Wider Public Finances.

The PA tables provide costs as positive numbers while revenues as negative numbers. All amounts in the PA table are discounted to the Department's standard base year using the Department's standard discount rates. They are then converted to the market price unit of account and presented in £m in prices in the Department's standard base year.

This spreadsheet contains the same number of worksheets for all options and sensitivity tests as reported in Figure 11.2.

11.5. ANALYSIS OF MONETISED COSTS AND BENEFITS TABLES

This workbook has been used to show the Analysis of Monetised Costs and Benefits (AMCB) tables related to our preferred option, Low Cost option and sensitivity tests.

The AMCB tables include costs and benefits which are presented in monetised form in transport appraisals.

This spreadsheet contains the same number of worksheets for all options and sensitivity tests as reported in Figure 11.2.

12. FOLDER K - ECONOMIC PARAMETERS

12.1. INTRODUCTION

This chapter of the annex provides a user guide to Folder K which illustrates the calculations undertaken to update the economic parameters within the SYSTM+ model in preparation for use in assessing the LSTF Programme. This folder contains the following spreadsheet “Economic Parameters SYSTM+ (WebTAG 3.5.6 - Apr 2011)”.

12.2. ECONOMIC PARAMETERS SYSTM+ (WEBTAG 3.5.6 - APR 2011)

This spreadsheet has been used to estimate the generalised cost coefficients. This covers the value of time, fuel and non-fuel vehicle operating costs. This spreadsheet contains the following worksheets:

Figure 12.1 Purpose of worksheets – “Economic Parameters SYSTM+ (WebTAG 3.5.6 - Apr 2011)”

Sheet	Purpose
Demand for average weighting	This worksheet displays the average demand values across time periods
RPI	This worksheet displays the RPI values which are taken from DMRB V13 S1 Ch7 Table 7/1 Values of RPF and RPI
Value of Time	This worksheet displays the VoT estimated for each time period and vehicle type
WebTAG 3.5.6 Table 3	This worksheet displays the forecast growth in the working and non-working VoT extracted from webTAG 3.5.6 Table 3
WebTAG 3.5.6 Tables 1,2	This worksheet displays the values of working and non-working time per person extracted from webTAG 3.5.6 Tables 1 and 2
WebTAG 3.5.6 Tables 4, 5 & 6	This worksheet displays the values of car occupancies, vehicle occupancies and annual % change in car passenger occupancy up to 2036 extracted from webTAG 3.5.6 Tables 4, 5 and 6
WebTAG 3.5.6 Table 7	This worksheet displays the proportion of travel in work and non-work time extracted from webTAG 3.5.6 Table 7
Results (SATURN)	This worksheet displays the VoT estimated for each time period and vehicle type for the base year and future years
Results (RDM)	This worksheet displays the macro run for base year
WebTAG 3.5.6 Tables 10-14	This worksheet displays the values used to estimate the fuel vehicle operating costs extracted from webTAG 3.5.6 Tables 10-14
WebTAG 3.5.6 Table 15	This worksheet displays the values used to estimate the non-fuel vehicle operating costs extracted from webTAG 3.5.6 Table 15

Note: The Intellectual Property Rights of this spreadsheet remain with AECOM therefore it cannot be used by SYPTTE except in relation to SYSTM+. It must not be passed on to any third parties except in this case it can be shared with DfT providing the same restrictions are passed on to them.

