

Third River Crossing High Level Option Testing

Economic Assessment

Project title	Third River Crossing	Job number	
cc	Warwickshire County Council	File reference	VM150036.R004
Prepared by	Barney Newbould	Date	7 July 2016
Subject	Economic Assessment		

Introduction

1. This Note has been produced to summarise the findings from the economic appraisals undertaken as part of the assessment of the provision of a Third River Crossing in Stratford upon Avon. This builds upon the work undertaken in the High Level Option Appraisal Report¹.
2. A series of outputs have been produced from the Stratford upon Avon Wide Area (SuAWA) Core Strategy model, in three different network scenarios. In addition to the standard modelling outputs an economic analysis has also been undertaken using the Trips-all outputs. Full details on the inclusions within each of the scenarios tested have been provided within a subsequent section of this Note.
3. So that the outline economic analysis could be undertaken quickly and in a manner which was conversant with the modelling approach adopted thus far, it was decided that the assessment would be completed using the Paramics PEARS add-on (Program for the Economic Assessment of Road Schemes).

PEARS

4. PEARS is an economic assessment package that has been specifically designed for use with the output from traffic micro simulation models. The economic concepts in PEARS are consistent with the Fixed Trip Matrix methodologies of COBA and NESA (as detailed in DMRB Volumes 13 and 15).
5. PEARS carries out trip-based assessments of changes in travel time costs and vehicle operating costs. The costs of a trip-based assessment are derived by aggregating the costs of each individually modelled vehicle on the network. By comparison, traditional link-based

¹ VM155036 R001 High Level Option Appraisal Report

assessments (e.g. COBA, NESAs) and matrix based assessments (e.g. TUBA) rely on a single travel time and vehicle operating cost for each link or origin/destination movement representative of the whole modelled period and each vehicle classification modelled.

6. PEARS does not at present consider accidents and therefore, if consideration of accidents is required, a separate accident assessment is required (usually an 'accident only' COBA or NESAs assessment). In addition, at present, PEARS does not consider non-traffic related maintenance.

Key Assumptions

7. The following section provides an overview of the key assumptions, parameter and highway schemes that have been adopted within the model scenarios in order for the PEARS assessment to be undertaken.

Scenario Years

8. The analysis was initially based on 2021 and 2031 forecast years, both of which have been forecast from the 2013 Base model with the inclusion of relevant committed developments, TEMPRO factors, and Core Strategy assumptions relating to infrastructure and development.

Time periods

9. The economic assessment of each Third River Crossing option has focussed on the model outputs for AM (07:00 to 10:00) and PM (16:00 to 19:00) periods. The outputs from these periods have been annualised by the appropriate factors:

- AM Peak Period (07:00 to 10:00): 253
- PM Peak Period (16:00 to 19:00): 253

Modelled Networks

10. The assessment has been undertaken within the Core Strategy network. It has previously been agreed with Warwickshire County Council (WCC) that in terms of scenario testing the Core Strategy scenario represents the most accurate future year scenario, as opposed to the Reference Case. The Core Strategy scenario includes all known Local Plan assumptions along with the infrastructure changes listed below. Further detail on the Core Strategy model is provided in the High Level Option Appraisal Report.

- Evesham Place/Evesham Road Roundabout - This roundabout has been reconfigured as a signal controlled priority junction.
- Shipston Road/Clifford Lane and Shipston Road/Seven Meadows Road Roundabouts - Widening the approaches to the roundabouts as well as, where necessary, the circulating carriageway. The two lane exit on the Shipston Road SB has been extended to a dual section between the two junctions which provides additional capacity. There is also a segregated left turn lane for Clifford Lane NB to Shipston Road left turning traffic.

- Birmingham Road – The provision of two lanes northbound along the Birmingham Road from south of the junction with Regal Road to north of the junction with Hamlet Way.
- Birmingham Road/A46 ‘Bishopton Island’ Roundabout - Widening of the circulating carriageway and entry and exit flares.
- Wildmoor Roundabout - Widening of the circulating carriageway and entry and exit flares. The scheme also includes a segregated left turn for the A46 west to north movement.

11. The following three scheme options have been tested in the Core Strategy model.

- S-WRR (South-Western Relief Road)
- ERR (Eastern Relief Road)
- Partial ERR (Partial Eastern Relief Road)

Scheme Costs

12. Based on information provided by WCC, the costs for each of the schemes to be tested is summarised as follows:

- S-WRR: **£29.38 million**
- ERR: **£35.25 million**
- Partial ERR: **£40.20 million**

13. These prices were based on July 2015 values with an RPI index of 128.0 and are inclusive of a 44% allowance for Optimism Bias.

14. The cost profile associated with the delivery of the scheme is summarised for each option in Table 1.

Modelled Options

15. Based upon the relevant scheme inclusions, cost and delivery information provided by WCC, the following table has been created to summarise the options that have been modelled to inform the economic assessment.

Table 1 Modelled Options

Option	Assessment Description	Assessment Years	Scheme Costs	Delivery Years	Cost Profile
Option 01	Core Strategy Model vs. S-WRR Model	2021 & 2031	£29.38m	2020-2021	Y1 = 50%, Y2 = 50%
Option 02	Core Strategy vs. ERR Model	2021 & 2031	£35.25m	2020-2021	Y1 = 50%, Y2 = 50%
Option 03	Core Strategy vs. Partial ERR Model	2021 & 2031	£40.20m	2020-2021	Y1 = 50%, Y2 = 50%

Assessment Parameters

16. The opening year of the assessment was assumed to be 2021.
17. Traffic growth was capped at 2036 since NTEM does not at this stage assume any growth beyond this period.
18. The assessment period was constrained to 30 years as opposed to the 60 years recommended in WebTag, the benefit calculations will therefore continue up to 2051 but it assumes that the benefits from the implementation of the schemes would cease from that point onwards. In reality the benefits will begin to diminish towards the end of the life of the scheme and the delay levels would begin to converge again.
19. The calculation of the fuel costs within the PEARS assessment was based on outputs from the Trips-all file (Calculated method).
20. Accident and maintenance costs have not been included within the assessment at this time.

Outputs

21. The outputs from PEARS are presented in the form of TEE tables 15A, 15B and 15C. Further information on the underlying principles of economic assessment can be found in DMRB Volumes 13 and 15 and TAG Units 3.5.4 and 3.5.6.
22. The TEE tables produced for each of the option packages are presented alongside this Technical Note, in Appendix A-C.
23. Analysis of the TEE tables reveals the following Benefit to Cost Ratios based on the application of the aforementioned assessment parameters.
 - **Option 01 Core Strategy vs S-WRR** (2021 & 2031) @ £29.38m: BCR of **8.04**
 - **Option 02 Core Strategy vs ERR** (2021 & 2031) @ £35.25m: BCR of **5.35**
 - **Option 03 Core Strategy vs Partial ERR** (2021 & 2031) @ £40.20m: BCR of **-0.07**

Conclusions

24. From the economic assessment undertaken within this study it is clear that the S-WRR option delivers the most favourable BCR. The ERR also delivers a positive BCR, albeit not as

beneficial as the S-WRR. The Partial ERR delivers a negative BCR and it clearly the least favourable option

APPENDIX A

Core Strategy vs Core Strategy + S-WRR

TEE Tables

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Table 15A: Economic Efficiency of the Road System (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs S-WRR

IMPACT	Ref.	Cal'n / Source	Total	Cars	LGVs	OGVs	Private Buses & Coaches	Service Buses
NON-BUSINESS USER BENEFITS								
Travel Time								
Commuting Travel Time	1		£41.35	£41.19	£0.15			£0.00
Other Travel Time	2		£56.51	£56.02	£0.50		£0.00	£0.00
Non-business Travel Time	3	1+2	£97.86					
Vehicle Operating Costs								
Commuter Fuel VOC	4		£3.02	£3.01	£0.01			
Commuter Non-fuel VOC	5		£0.56	£0.56	£0.00			
Other Fuel VOC	6		£3.11	£3.09	£0.03			
Other Non-fuel VOC	7		£0.57	£0.57	£0.00			
Non-business Vehicle Operating Costs	8	4+5+6+7	£7.27					
<i>During Construction and Maintenance</i>								
Commuting: During Construction and Maintenance (*)	9							
Other: During Construction and Maintenance (*)	10							
NET NON-BUSINESS BENEFITS: COMMUTING	11	1+4+5+9	£44.94					
NET NON-BUSINESS BENEFITS: OTHER	12	2+6+7+10	£60.20					
NET NON-BUSINESS BENEFITS - SUB TOTAL	13	11+12	£105.14					
BUSINESS USER BENEFITS								
User Benefits								
Business Travel Time	14		£65.91	£56.16	£7.69	£2.05	£0.00	£0.00
Fuel VOC	15		£1.80	£1.02	£0.26	£0.52		
Non-fuel VOC	16		£3.07	£2.38	£0.25	£0.44		
Business Vehicle Operating Costs	17	15+16	£4.88					
<i>During Construction (*)</i>	18							
<i>During Maintenance (*)</i>	19							
During Construction and Maintenance (*)	20	18+19						
<i>Subtotal</i>	21	14+17+20	£70.79					
Private Sector Provider Impacts								
<i>Revenue (*)</i>	22							
Fuel VOC	23		£0.00				£0.00	£0.00
Non-fuel VOC	24		£0.00				£0.00	£0.00
Private Sector Vehicle Operating Costs	25	23+24	£0.00					
Investment Costs (*)	26							
Grant / Subsidy (*)	27							
<i>Subtotal</i>	28	22+25+26+27	£0.00					
Other Business Impacts								
<i>Developer & Other Contributions (*)</i>	29							
NET BUSINESS IMPACT	30	21+28+29	£70.79					
TOTAL PRESENT VALUES OF TEE IMPACTS	31	13+30	£175.92					

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Sub-Totals / Impacts etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15B: Public Accounts

Scheme Title 2021 to 2031 Core Strategy vs S-WRR

IMPACT	Reference	Cal'c / Source	Total
Local Government Funding			
<i>Revenue (*)</i>	32		_____
<i>Investment Costs (*)</i>	33		_____
<i>Operating Costs (*)</i>	34		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	35		_____
<i>Traffic Related (Group 2) (*)</i>	36		_____
<i>Developer & Other Contributions (*)</i>	37		_____
<i>Grant Subsidy Payment (*)</i>	38		_____
Net Impact	39	Sum(32 to 38)	_____
Central Government Funding: Transport			
<i>Revenue (*)</i>	40		_____
<i>Investment Costs</i>	41		£21.51
<i>Operating Costs (*)</i>	42		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	43		_____
<i>Traffic Related (Group 2) (*)</i>	44		_____
<i>Developer & Other Contributions (*)</i>	45		_____
<i>Grant Subsidy Payment (*)</i>	46		_____
Net Impact	47	Sum(40 to 46)	£21.51
Central Government Funding : Non-Transport			
<i>Indirect Tax Revenues</i>	48		£4.11
TOTALS			
Broad Transport Budget	49	39+47	£21.51
Wider Public Finances	50	48	£4.11

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Net Impacts / Totals etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15C: Analysis of Monetised Costs and Benefits (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs S-WRR

IMPACT	Reference	Cal'n / Source	Total
TEE Impacts			
<i>Noise (* ^)</i>	51		
<i>Local Air Quality (* ^)</i>	52		
Greenhouse Gases (Emissions) (low)			£0.63
Greenhouse Gases (Emissions) (central)	53		£1.26
Greenhouse Gases (Emissions) (high)			£1.89
<i>Journey Ambience (* ^)</i>	54		
<i>Accident Benefits (*)</i>	55		
Non-Business User Benefits: Commuting	56	11	£44.94
Non-Business User Benefits: Other	57	12	£60.20
Business User & Provider Benefits	58	30	£70.79
Wider Public Finance (Indirect Tax Revenue)	59	-50	£-4.11
<i>Option Values (* ^)</i>	60		
Present Value of Benefits (PVB)	61	Sum(51 to 60)	£173.08
Broad Transport Budget	62	49	£21.51
Present Value of Costs (PVC)	63	62	£21.51
OVERALL IMPACTS			
Net Present Value (NPV)	64	61-63	£151.56
Benefit to Cost Ratio (BCR)	65	61/63	8.04

* Impact calculated external to PEARS & manually inputted by User. Any manual inputs will require the manual recalculation of the NPV & BCR etc.

^ Costs & benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect.

In addition to the costs & benefits outlined above, there may also be significant others, 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 the value for money (VFM) and should not be used as the sole basis for decisions.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

APPENDIX B

Core Strategy vs Core Strategy + ERR

TEE Tables

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Table 15A: Economic Efficiency of the Road System (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs ERR Scheme

IMPACT	Ref.	Cal'n / Source	Total	Cars	LGVs	OGVs	Private Buses & Coaches	Service Buses
NON-BUSINESS USER BENEFITS								
Travel Time								
Commuting Travel Time	1		£32.47	£32.34	£0.13			£0.00
Other Travel Time	2		£46.99	£46.56	£0.42		£0.00	£0.00
Non-business Travel Time	3	1+2	£79.46					
Vehicle Operating Costs								
Commuter Fuel VOC	4		£2.57	£2.56	£0.01			
Commuter Non-fuel VOC	5		£0.65	£0.65	£0.00			
Other Fuel VOC	6		£2.78	£2.75	£0.03			
Other Non-fuel VOC	7		£0.70	£0.69	£0.01			
Non-business Vehicle Operating Costs	8	4+5+6+7	£6.70					
<i>During Construction and Maintenance</i>								
Commuting: During Construction and Maintenance (*)	9							
Other: During Construction and Maintenance (*)	10							
NET NON-BUSINESS BENEFITS: COMMUTING	11	1+4+5+9	£35.69					
NET NON-BUSINESS BENEFITS: OTHER	12	2+6+7+10	£50.46					
NET NON-BUSINESS BENEFITS - SUB TOTAL	13	11+12	£86.15					
BUSINESS USER BENEFITS								
User Benefits								
Business Travel Time	14		£50.91	£42.59	£6.55	£1.77	£0.00	£0.00
Fuel VOC	15		£1.75	£0.84	£0.28	£0.63		
Non-fuel VOC	16		£2.66	£1.91	£0.28	£0.47		
Business Vehicle Operating Costs	17	15+16	£4.41					
<i>During Construction (*)</i>	18							
<i>During Maintenance (*)</i>	19							
During Construction and Maintenance (*)	20	18+19						
<i>Subtotal</i>	21	14+17+20	£55.32					
Private Sector Provider Impacts								
<i>Revenue (*)</i>	22							
Fuel VOC	23		£0.00				£0.00	£0.00
Non-fuel VOC	24		£0.00				£0.00	£0.00
Private Sector Vehicle Operating Costs	25	23+24	£0.00					
Investment Costs (*)	26							
Grant / Subsidy (*)	27							
<i>Subtotal</i>	28	22+25+26+27	£0.00					
Other Business Impacts								
<i>Developer & Other Contributions (*)</i>	29							
NET BUSINESS IMPACT	30	21+28+29	£55.32					
TOTAL PRESENT VALUES OF TEE IMPACTS	31	13+30	£141.48					

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Sub-Totals / Impacts etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15B: Public Accounts

Scheme Title 2021 to 2031 Core Strategy vs ERR Scheme

IMPACT	Reference	Cal'c / Source	Total
Local Government Funding			
<i>Revenue (*)</i>	32		_____
<i>Investment Costs (*)</i>	33		_____
<i>Operating Costs (*)</i>	34		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	35		_____
<i>Traffic Related (Group 2) (*)</i>	36		_____
<i>Developer & Other Contributions (*)</i>	37		_____
<i>Grant Subsidy Payment (*)</i>	38		_____
Net Impact	39	Sum(32 to 38)	_____
Central Government Funding: Transport			
<i>Revenue (*)</i>	40		_____
<i>Investment Costs</i>	41		£25.97
<i>Operating Costs (*)</i>	42		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	43		_____
<i>Traffic Related (Group 2) (*)</i>	44		_____
<i>Developer & Other Contributions (*)</i>	45		_____
<i>Grant Subsidy Payment (*)</i>	46		_____
Net Impact	47	Sum(40 to 46)	£25.97
Central Government Funding : Non-Transport			
<i>Indirect Tax Revenues</i>	48		£3.67
TOTALS			
Broad Transport Budget	49	39+47	£25.97
Wider Public Finances	50	48	£3.67

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Net Impacts / Totals etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15C: Analysis of Monetised Costs and Benefits (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs ERR Scheme

IMPACT	Reference	Cal'n / Source	Total
TEE Impacts			
<i>Noise (* ^)</i>	51		_____
<i>Local Air Quality (* ^)</i>	52		_____
Greenhouse Gases (Emissions) (low)			£0.56
Greenhouse Gases (Emissions) (central)	53		£1.13
Greenhouse Gases (Emissions) (high)			£1.69
<i>Journey Ambience (* ^)</i>	54		_____
<i>Accident Benefits (*)</i>	55		_____
Non-Business User Benefits: Commuting	56	11	£35.69
Non-Business User Benefits: Other	57	12	£50.46
Business User & Provider Benefits	58	30	£55.32
Wider Public Finance (Indirect Tax Revenue)	59	-50	£-3.67
<i>Option Values (* ^)</i>	60		_____
Present Value of Benefits (PVB)	61	Sum(51 to 60)	£138.93
Broad Transport Budget	62	49	£25.97
Present Value of Costs (PVC)	63	62	£25.97
OVERALL IMPACTS			
Net Present Value (NPV)	64	61-63	£112.97
Benefit to Cost Ratio (BCR)	65	61/63	5.35

* Impact calculated external to PEARS & manually inputted by User. Any manual inputs will require the manual recalculation of the NPV & BCR etc.

^ Costs & benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect.

In addition to the costs & benefits outlined above, there may also be significant others, 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 the value for money (VFM) and should not be used as the sole basis for decisions.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

APPENDIX C

Core Strategy vs Core Strategy + Partial ERR

TEE Tables

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Table 15A: Economic Efficiency of the Road System (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs Partial-ERR

IMPACT	Ref.	Cal'n / Source	Total	Cars	LGVs	OGVs	Private Buses & Coaches	Service Buses
NON-BUSINESS USER BENEFITS								
Travel Time								
Commuting Travel Time	1		£-0.19	£-0.19	£0.00			£0.00
Other Travel Time	2		£1.42	£1.41	£0.01		£0.00	£0.00
Non-business Travel Time	3	1+2	£1.24					
Vehicle Operating Costs								
Commuter Fuel VOC	4		£-0.36	£-0.36	£0.00			
Commuter Non-fuel VOC	5		£-0.34	£-0.34	£0.00			
Other Fuel VOC	6		£-0.27	£-0.26	£-0.01			
Other Non-fuel VOC	7		£-0.30	£-0.29	£-0.01			
Non-business Vehicle Operating Costs	8	4+5+6+7	£-1.27					
<i>During Construction and Maintenance</i>								
Commuting: During Construction and Maintenance (*)	9							
Other: During Construction and Maintenance (*)	10							
NET NON-BUSINESS BENEFITS: COMMUTING	11	1+4+5+9	£-0.89					
NET NON-BUSINESS BENEFITS: OTHER	12	2+6+7+10	£0.85					
NET NON-BUSINESS BENEFITS - SUB TOTAL	13	11+12	£-0.04					
BUSINESS USER BENEFITS								
User Benefits								
Business Travel Time	14		£-1.49	£-1.22	£0.10	£-0.37	£0.00	£0.00
Fuel VOC	15		£-0.58	£-0.15	£-0.07	£-0.36		
Non-fuel VOC	16		£-0.46	£-0.20	£-0.08	£-0.18		
Business Vehicle Operating Costs	17	15+16	£-1.05					
<i>During Construction (*)</i>	18							
<i>During Maintenance (*)</i>	19							
During Construction and Maintenance (*)	20	18+19						
<i>Subtotal</i>	21	14+17+20	£-2.53					
Private Sector Provider Impacts								
<i>Revenue (*)</i>	22							
Fuel VOC	23		£0.00				£0.00	£0.00
Non-fuel VOC	24		£0.00				£0.00	£0.00
Private Sector Vehicle Operating Costs	25	23+24	£0.00					
Investment Costs (*)	26							
Grant / Subsidy (*)	27							
<i>Subtotal</i>	28	22+25+26+27	£0.00					
Other Business Impacts								
<i>Developer & Other Contributions (*)</i>	29							
NET BUSINESS IMPACT	30	21+28+29	£-2.53					
TOTAL PRESENT VALUES OF TEE IMPACTS	31	13+30	£-2.57					

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Sub-Totals / Impacts etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15B: Public Accounts

Scheme Title 2021 to 2031 Core Strategy vs Partial-ERR

IMPACT	Reference	Cal'c / Source	Total
Local Government Funding			
<i>Revenue (*)</i>	32		_____
<i>Investment Costs (*)</i>	33		_____
<i>Operating Costs (*)</i>	34		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	35		_____
<i>Traffic Related (Group 2) (*)</i>	36		_____
<i>Developer & Other Contributions (*)</i>	37		_____
<i>Grant Subsidy Payment (*)</i>	38		_____
Net Impact	39	Sum(32 to 38)	_____
Central Government Funding: Transport			
<i>Revenue (*)</i>	40		_____
<i>Investment Costs</i>	41		£29.68
<i>Operating Costs (*)</i>	42		_____
Maintenance Costs			
<i>Non-Traffic (Group 1) (*)</i>	43		_____
<i>Traffic Related (Group 2) (*)</i>	44		_____
<i>Developer & Other Contributions (*)</i>	45		_____
<i>Grant Subsidy Payment (*)</i>	46		_____
Net Impact	47	Sum(40 to 46)	£29.68
Central Government Funding : Non-Transport			
<i>Indirect Tax Revenues</i>	48		£-0.63
TOTALS			
Broad Transport Budget	49	39+47	£29.68
Wider Public Finances	50	48	£-0.63

* Impact calculated external to PEARS & manually input by User. Any manual inputs will require the manual recalculation of the Net Impacts / Totals etc. as well as the NPV & BCR etc. in Table 15C.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.

Table 15C: Analysis of Monetised Costs and Benefits (Market Prices)

Scheme Title 2021 to 2031 Core Strategy vs Partial-ERR

IMPACT	Reference	Cal'n / Source	Total
TEE Impacts			
<i>Noise (* ^)</i>	51		_____
<i>Local Air Quality (* ^)</i>	52		_____
Greenhouse Gases (Emissions) (low)			£-0.09
Greenhouse Gases (Emissions) (central)	53		£-0.18
Greenhouse Gases (Emissions) (high)			£-0.27
<i>Journey Ambience (* ^)</i>	54		_____
<i>Accident Benefits (*)</i>	55		_____
Non-Business User Benefits: Commuting	56	11	£-0.89
Non-Business User Benefits: Other	57	12	£0.85
Business User & Provider Benefits	58	30	£-2.53
Wider Public Finance (Indirect Tax Revenue)	59	-50	£0.63
<i>Option Values (* ^)</i>	60		_____
Present Value of Benefits (PVB)	61	Sum(51 to 60)	£-2.13
Broad Transport Budget	62	49	£29.68
Present Value of Costs (PVC)	63	62	£29.68
OVERALL IMPACTS			
Net Present Value (NPV)	64	61-63	£-31.80
Benefit to Cost Ratio (BCR)	65	61/63	-0.07

* Impact calculated external to PEARS & manually inputted by User. Any manual inputs will require the manual recalculation of the NPV & BCR etc.

^ Costs & benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect.

In addition to the costs & benefits outlined above, there may also be significant others, 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 the value for money (VFM) and should not be used as the sole basis for decisions.

This analysis is based on Central traffic growth.

Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are in units of 1,000,000 pounds sterling and are discounted to 2010.

Evaluation period 30 years. Scheme opening year 2021.

Current year 2014.