

1. High Growth Scenario

Travel Time Benefits and Vehicle Operating Costs

Table 1.1 shows the total High Growth scenario benefits over the 60-year appraisal period split into benefit type and split between trip purposes. This highlights that the majority of the benefits created by the strategy are travel time benefits for highway.

Table 1.1: Transport Benefits by Trip Purpose, High Growth Scenario (£'000 2010 Prices)

	Purpose	Travel Time	PT Fares	VOC Fuel	VOC Non-fuel	Indirect Tax	Total
Highway	Business	£452,658	£-	£19,586	£18,687	-£22,960	£467,971
	Commuting	£557,125	£-	£12,110	£84,510	-£71,043	£582,702
	Other	£438,034	£-	£8,940	£129,704	-£105,407	£471,271
	Total	£1,447,817	£-	£40,636	£232,900	-£199,409	£1,521,944
PT	Business	£21,785	-£5,952	£50	£77	£650	£16,611
	Commuting	£566,645	£29,110	£2,161	£-	-£45,482	£552,434
	Other	£896,066	£215,889	£8,184	£-	-£39,818	£1,080,321
	Total	£1,484,496	£239,047	£10,395	£77	-£84,649	£1,649,366

Monetised Environmental Assessment Results

The TUBA calculated impact on greenhouse gases for the scheme present a predicted benefit of £86 million. This decrease in cost is predominately down to the mode shift from car to public transport.

Transport Economic Efficiency

The Transport Economic Efficiency (TEE) table provides a summary of the travel time and vehicle operating cost benefits. The benefits are summarised by trip purpose. This includes the benefits generated from the main TUBA assessment, maintenance and construction scenarios. The TEE table for the High Growth scenario for the scheme is shown in Table 1.2.

Table 1.2: Economic Efficiency of the Transport System Results, High Growth Scenario (£'000 2010 Prices)

Non-business: Commuting	£'000
<u>User benefits</u>	
Travel time	£1,123,770
Vehicle operating costs	£98,781
User charges	£29,110
During Construction & Maintenance	£-
NET COMMUTING	£1,251,661
Non-business: Other	
<u>User benefits</u>	
Travel time	£1,334,100
Vehicle operating costs	£146,828
User charges	£215,889
During Construction & Maintenance	£-
NET OTHER	£1,696,816
Business	
<u>User benefits</u>	
Travel time	£474,443
Vehicle operating costs	£38,400

User charges	-£5,952
During Construction & Maintenance	£-
<i>Subtotal</i>	
<u>Private sector provider</u>	
Revenue	£-
Operating costs	£629,656
Investment costs	£-
Grant/subsidy	£-
<i>Subtotal</i>	£-
<u>Other business impacts</u>	
Developer contributions	£-
NET BUSINESS	£1,136,547
Total	
Present Value of Transport Economic Efficiency Benefits (TEE)	£4,085,024

Public Accounts

The Public Accounts table details the source of the scheme costs and have been summarised by local and central government. The Public Accounts table for the High Growth scenario is shown in Table 1.3.

Table 1.3: Public Accounts, Core Growth Scenario (£'000 2010 Prices)

Local Government Funding	
Revenue	£ -
Operating Costs	£ -
Investment Costs	£ -
Developer and Other Contributions	£ -
Grant/Subsidy Payments	£ -
Net Impact:	£ -
Central Government Funding: Transport	
Revenue	£-
Operating costs	£-
Investment Costs	£487,122
Developer and Other Contributions	£-
Grant/Subsidy Payments	£-
Net Impact:	£487,122
Central Government Funding: Non-Transport	
Indirect Tax Revenues	-£284,059
Totals	
Broad Transport Budget	£487,122
Wider Public Finances	-£284,059

Analysis of Monetised Costs and Benefits

The benefits from each individual assessment have been totalled to create the Present Value Benefits (PVB) of the scheme. They have been summarised in the AMCB table along with the PVC and the initial unadjusted Benefit-Cost Ratio (BCR). The AMCB table for the High Growth scenario for the scheme is shown in Table 1.4.

Table 1.4: Analysis of Monetised Costs and Benefits, High Growth Scenario (£'000 2010 Prices)

Noise	£-
Local Air Quality	£-
Greenhouse Gases	£85,675
Journey Quality	£-
Physical Activity	£-
Accidents	£169,309
Economic Efficiency: Consumer Users (Commuting)	£1,251,661
Economic Efficiency: Consumer Users (Other)	£1,696,816
Economic Efficiency: Business Users and Providers	£1,136,547
Wider Public Finances	£284,059
Present Value of Benefits (PVB)	£4,055,949
Broad Transport Budget	£487,122
Present Value of Costs (PVC)	£487,122
Overall Impacts	
Net Present Value (NPV)	£3,568,827
Initial Unadjusted Benefit to Cost Ratio (BCR)	8.33

The results show that the scheme provides significant benefits to transport users, resulting from the significant improvement in the performance provided by the schemes. The scheme produces an initial unadjusted BCR of **8.33**, which represents very high value-for-money¹.

¹ [DfT \(2015\) Value for Money Framework](#), Box 5.1

2. Low Growth Scenario

Travel Time Benefits and Vehicle Operating Costs

Table 2.1 shows the total Low Growth scenario benefits over the 60-year appraisal period split into benefit type and split between trip purposes. This highlights that the majority of the benefits created by the strategy are travel time benefits for highway.

Table 2.1: Transport Benefits by Trip Purpose, Low Growth Scenario (£'000 2010 Prices)

	Purpose	Travel Time	PT Fares	VOC Fuel	VOC Non-fuel	Indirect Tax	Total
Highway	Business	£173,037	£-	£5,321	£4,714	-£13,848	£169,225
	Commuting	£181,988	£-	£3,356	£81,096	-£59,911	£206,529
	Other	£145,453	£-	£583	£127,014	-£93,476	£179,575
	Total	£500,479	£-	£9,260	£212,824	-£167,235	£555,329
PT	Business	£16,406	-£5,423	£42	£61	£644	£11,730
	Commuting	£119,416	-£48,153	£313	£-	-£67,550	£4,026
	Other	£143,827	-£12,962	£1,018	£-	-£97,907	£33,976
	Total	£279,649	-£66,537	£1,372	£61	-£164,814	£49,732

Monetised Environmental Assessment Results

The TUBA calculated impact on greenhouse gases for the scheme present a predicted benefit of £70 million. This decrease in cost is predominately down to the mode shift from car to public transport.

Transport Economic Efficiency

The Transport Economic Efficiency (TEE) table provides a summary of the travel time and vehicle operating cost benefits. The benefits are summarised by trip purpose. This includes the benefits generated from the main TUBA assessment, maintenance and construction scenarios. The TEE table for the Low Growth scenario for the scheme is shown in Table 2.2.

Table 2.2: Economic Efficiency of the Transport System Results, Low Growth Scenario (£'000 2010 Prices)

Non-business: Commuting	£'000
<u>User benefits</u>	
Travel time	£301,405
Vehicle operating costs	£84,765
User charges	-£48,153
During Construction & Maintenance	£-
NET COMMUTING	£338,017
Non-business: Other	
<u>User benefits</u>	
Travel time	£289,281
Vehicle operating costs	£128,614
User charges	-£12,962
During Construction & Maintenance	£-
NET OTHER	£404,933
Business	
<u>User benefits</u>	
Travel time	£189,443
Vehicle operating costs	£10,138

User charges	-£5,423
During Construction & Maintenance	£-
<i>Subtotal</i>	
<u>Private sector provider</u>	
Revenue	£-
Operating costs	£1,179,208
Investment costs	£-
Grant/subsidy	£-
<i>Subtotal</i>	£-
<u>Other business impacts</u>	
Developer contributions	£-
NET BUSINESS	£1,373,367
Total	
Present Value of Transport Economic Efficiency Benefits (TEE)	£2,116,317

Public Accounts

The Public Accounts table details the source of the scheme costs and have been summarised by local and central government. The Public Accounts table for the Low Growth scenario is shown in Table 2.3.

Table 2.3: Public Accounts, Core Growth Scenario (£'000 2010 Prices)

Local Government Funding	
Revenue	£ -
Operating Costs	£ -
Investment Costs	£ -
Developer and Other Contributions	£ -
Grant/Subsidy Payments	£ -
Net Impact:	£ -
Central Government Funding: Transport	
Revenue	£-
Operating costs	£-
Investment Costs	£487,122
Developer and Other Contributions	£-
Grant/Subsidy Payments	£-
Net Impact:	£487,122
Central Government Funding: Non-Transport	
Indirect Tax Revenues	-£332,048
Totals	
Broad Transport Budget	£487,122
Wider Public Finances	-£332,048

Analysis of Monetised Costs and Benefits

The benefits from each individual assessment have been totalled to create the Present Value Benefits (PVB) of the scheme. They have been summarised in the AMCB table along with the PVC and the initial unadjusted Benefit-Cost Ratio (BCR). The AMCB table for the Low Growth scenario for the scheme is shown in Table 2.4.

Table 2.4: Analysis of Monetised Costs and Benefits, Low Growth Scenario (£'000 2010 Prices)

Noise	£-
Local Air Quality	£-
Greenhouse Gases	£69,701
Journey Quality	£-
Physical Activity	£-
Accidents	£167,075
Economic Efficiency: Consumer Users (Commuting)	£338,017
Economic Efficiency: Consumer Users (Other)	£404,933
Economic Efficiency: Business Users and Providers	£1,373,367
Wider Public Finances	£332,048
Present Value of Benefits (PVB)	£2,021,044
Broad Transport Budget	£487,122
Present Value of Costs (PVC)	£487,122
Overall Impacts	
Net Present Value (NPV)	£1,533,922
Initial Unadjusted Benefit to Cost Ratio (BCR)	4.15

The results show that the scheme provides significant benefits to transport users, resulting from the significant improvement in the performance provided by the schemes. The scheme produces an initial unadjusted BCR of **4.15**, which represents very high value-for-money².

² [DfT \(2015\) Value for Money Framework](#), Box 5.1