Scenario Test – Optimistic Growth

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Optimistic Growth)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	21,787	21,787		
Vehicle operating costs	1,022	1,022		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	22,809	22,809		
Business				
User benefits				
Travel time	34,194	21,491	12,703	
Vehicle operating costs	5,897	1,022	4,875	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	40,091	22,513	17,578	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	62,900			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	64,765			

Public Accounts (Optimistic Growth)

	ROAD INFRASTRUCTURE
ocal Government Funding	TOTAL
perating Costs	
vestment Costs	698
eveloper and Other Contributions	
NET IMPACT	698
ntral Government Funding	
perating costs	469
estment Costs	6,143
veloper and Other Contributions	
direct Tax Revenues	747
IET IMPACT	7,359

Analysis of Monetised Costs and Benefits (Optimistic Growth)

Noise		
Local Air Quality		
Greenhouse Gases	108	
Journey Ambience		
Accidents	22,011	
Consumer Users	22,809	
Business Users and Providers	40,091	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	85,019	
Public Accounts	8,057	
	L	
Present Value of Costs (see notes) (PVC)	8,057	
Overall Impacts		
Net Present Value (NPV)	76,962	NPV=PVB-PV0
Benefit to Cost Ratio (BCR)	10.552	BCR=PVB/PVC

Scenario Test – Pessimistic Growth

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Pessimistic Growth)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	13,278	13,278		
Vehicle operating costs	553	553		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	13,831	13,831		
Business				
User benefits				
Travel time	22,516	13,455	9,061	
Vehicle operating costs	4,940	760	4,180	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	27,456	14,215	13,241	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	27,456			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	41,287			

Public Accounts (Pessimistic Growth)

	ROAD INFRASTRUCTURE
Local Government Funding	TOTAL
Operating Costs	
investment Costs	698
Developer and Other Contributions	
NET IMPACT	698
ntral Government Funding	
perating costs	469
vestment Costs	6,143
eveloper and Other Contributions	
direct Tax Revenues	209
NET IMPACT	6,821
resent Value of Costs (PVC)	
	7,519

Analysis of Monetised Costs and Benefits (Pessimistic Growth)

Noise		
Local Air Quality		
Greenhouse Gases	25	
Journey Ambience		
Accidents	22,011	
Consumer Users	13,831	
Business Users and Providers	27,456	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	63,323	
Public Accounts	7,519	
Present Value of Costs (see notes) (PVC)	7,519	
Overall Impacts		
Net Present Value (NPV)	55,804	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	8.422	BCR=PVB/PVC

Sensitivity Test 1 - Present value of costs + 10%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 1)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	18,169	18,169		
Vehicle operating costs	704	704		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	18,873	18,873		
Business				
User benefits				
Travel time	28,637	17,610	11,027	
Vehicle operating costs	5,451	892	4,559	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	34,088	18,502	15,586	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	34,088			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	52,961			

Public Accounts (Sensitivity Test 1)

	ROAD INFRASTRUCTURE
local Government Funding	TOTAL
Operating Costs	
nvestment Costs	768
eveloper and Other Contributions	
NET IMPACT	768
ntral Government Funding	
perating costs	516
vestment Costs	6,758
eveloper and Other Contributions	
ndirect Tax Revenues	449
NET IMPACT	7,722

Analysis of Monetised Costs and Benefits (Sensitivity Test 1)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	18,873	
Business Users and Providers	34,088	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	75,031	
Public Accounts	8,490	
Present Value of Costs (see notes) (PVC)	8,490	
Overall Impacts		
Net Present Value (NPV)	66,541	NPV=PVB-PV0
Benefit to Cost Ratio (BCR)	8.838	BCR=PVB/PVC

Sensitivity Test 2 - Present value of costs + 25%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 2)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	18,169	18,169		
Vehicle operating costs	704	704		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	18,873	18,873		
Business			·	·
User benefits				
Travel time	28,637	17,610	11,027	
Vehicle operating costs	5,451	892	4,559	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	34,088	18,502	15,586	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	34,088			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	52,961			

Public Accounts (Sensitivity Test 2)

Local Government Funding	ROAD INFRASTRUCTURE TOTAL
8	IOTAL
erating Costs	
estment Costs	873
veloper and Other Contributions	
NET IMPACT	873
tral Government Funding	
erating costs	586
estment Costs	7,679
veloper and Other Contributions	
eveloper and Other Contributions direct Tax Revenues	510
•	510 8,775

Analysis of Monetised Costs and Benefits (Sensitivity Test 2)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	18,873	
Business Users and Providers	34,088	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	75,031	
	•	
Public Accounts	9,648	
Present Value of Costs (see notes) (PVC)	9,648	
Overall Impacts		
Net Present Value (NPV)	65,384	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	7.777	BCR=PVB/PVC

Sensitivity Test 3 - Present value of costs + 50%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 3)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	18,169	18,169		
Vehicle operating costs	704	704		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	18,873	18,873		
Business			·	·
User benefits				
Travel time	28,637	17,610	11,027	
Vehicle operating costs	5,451	892	4,559	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	34,088	18,502	15,586	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	34,088			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	52,961			

Public Accounts (Sensitivity Test 3)

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Local Government Funding	ROAD INFRASTRUCTURE TOTAL
Operating Costs	
nvestment Costs	1,047
eveloper and Other Contributions	
NET IMPACT	1,047
ntral Government Funding	
perating costs	469
vestment Costs	6,143
eveloper and Other Contributions	
direct Tax Revenues	408
	10.520
ET IMPACT	10,530

Analysis of Monetised Costs and Benefits (Sensitivity Test 3)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	18,873	
Business Users and Providers	34,088	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	75,031	
Public Accounts	11,577	
Present Value of Costs (see notes) (PVC)	11,577	
Overall Impacts		
Net Present Value (NPV)	63,454	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	6.481	BCR=PVB/PVC

Sensitivity Test 4 - Present value of benefits - 10%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 4)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	16,352	16,352		
Vehicle operating costs	634	634		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	16,986	16,986		
Business				
User benefits				
Travel time	25,773	15,849	9,924	
Vehicle operating costs	4,906	803	4,103	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	30,679	16,652	14,027	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	30,679			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	47,665			

Public Accounts (Sensitivity Test 4)

Г

	ROAD INFRASTRUCTURE
Local Government Funding	TOTAL
Operating Costs	
nvestment Costs	698
eveloper and Other Contributions	
NET IMPACT	698
ntral Government Funding	
perating costs	469
vestment Costs	6,143
eveloper and Other Contributions	
direct Tax Revenues	408
IET IMPACT	7,020
	7,718

Analysis of Monetised Costs and Benefits (Sensitivity Test 4)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	16,986	
Business Users and Providers	30,679	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	69,735	
Public Accounts	7,718	
Present Value of Costs (see notes) (PVC)	7,718	
Overall Impacts		
Net Present Value (NPV)	62,017	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	9.035	BCR=PVB/PVC

Sensitivity Test 5 - Present value of benefits - 25%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 5)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	13,627	13,627		
Vehicle operating costs	528	528		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	14,155	14,155		
Business				
User benefits				
Travel time	21,478	13,208	8,270	
Vehicle operating costs	4,088	669	3,419	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	25,566	13,877	11,690	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	25,566			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	39,721			

Public Accounts (Sensitivity Test 5)

	ROAD INFRASTRUCTURE
Local Government Funding	TOTAL
Operating Costs	
nvestment Costs	698
Developer and Other Contributions	
NET IMPACT	698
entral Government Funding	
Dperating costs	469
vestment Costs	6,143
eveloper and Other Contributions	
ndirect Tax Revenues	408
NET IMPACT	7,020
	7,718

Analysis of Monetised Costs and Benefits (Sensitivity Test 5)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	14,155	
Business Users and Providers	25,566	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	61,791	
Public Accounts	7,718	
Present Value of Costs (see notes) (PVC)	7,718	
Overall Impacts		
Net Present Value (NPV)	54,073	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	8.006	BCR=PVB/PVC

Sensitivity Test 6 - Present value of benefits - 50%

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 6)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	9,085	9,085		
Vehicle operating costs	352	352		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	9,437	9,437		
Business			·	·
User benefits				
Travel time	14,319	8,805	5,514	
Vehicle operating costs	2,726	446	2,280	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	17,044	9,251	7,793	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	17,044			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	26,481			

Public Accounts (Sensitivity Test 6)

	ROAD INFRASTRUCTURE
Local Government Funding	TOTAL
Operating Costs	
nvestment Costs	698
eveloper and Other Contributions	
NET IMPACT	698
entral Government Funding	
perating costs	469
vestment Costs	6,143
eveloper and Other Contributions	
ndirect Tax Revenues	408
NET IMPACT	7,020
Present Value of Costs (PVC)	7,718

Analysis of Monetised Costs and Benefits (Sensitivity Test 6)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	9,437	
Business Users and Providers	17,044	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	48,551	
Public Accounts	7,718	
Present Value of Costs (see notes) (PVC)	7,718	
Overall Impacts		
Net Present Value (NPV)	40,833	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	6.291	BCR=PVB/PVC

Sensitivity Test 7 - The level of increase in the present value of costs at which the NPV of the scheme becomes zero

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	18,169	18,169		
Vehicle operating costs	704	704		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	18,873	18,873		
Business				
User benefits				
Travel time	28,673	17,610	11,027	
Vehicle operating costs	5,451	892	4,559	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	34,088	18,502	15,586	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	34,088			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	52,961			

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 7)

Public Accounts (Sensitivity Test 7)

Local Government Funding	ROAD INFRASTRUCTURE TOTAL
Operating Costs	
avestment Costs	6,786
eveloper and Other Contributions	
NET IMPACT	6,786
ntral Government Funding	
perating costs	4,559
vestment Costs	59,720
eveloper and Other Contributions	
Developer and Other Contributions ndirect Tax Revenues	3,966
1	3,966 68,245

Analysis of Monetised Costs and Benefits (Sensitivity Test 7)

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	18,873	
Business Users and Providers	34,088	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	75,031	
		<u> </u>
Public Accounts	75,031	
Present Value of Costs (see notes) (PVC)	75,031	
Overall Impacts		
Net Present Value (NPV)	0.0	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	1.000	BCR=PVB/PVC

<u>Sensitivity Test 8 - Present value of benefits - The level of decrease in the present value of benefits at which the NPV of the scheme becomes zero</u>

Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Sensitivity Test 8)

Consumer User Benefits				
User benefits	TOTAL	CARS AND PRIVATE LGVS	GOOS VEHICLES AND BUSINESS LGVS	BUS AND COACH
Travel time	1,869	1,869		
Vehicle operating costs	72	72		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	1,941	1,941		
Business				
User benefits				
Travel time	2,946	1,811	1,134	
Vehicle operating costs	561	92	469	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	3,506	1,903	1,603	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	3,506			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	5,448			

Public Accounts (Sensitivity Test 8)

ROAD INFRASTRUCTURE
TOTAL
698
698
469
6,143
408
7,020

Analysis of Monetised Costs and Benefits (Sensitivity Test 8)

Noise		
Local Air Quality		
Greenhouse Gases	6	
Journey Ambience		
Accidents	2,264	
Consumer Users	1,941	
Business Users and Providers	3,506	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	7,718	
Public Accounts	7,718	
Present Value of Costs (see notes) (PVC)	7,718	
Overall Impacts		
Net Present Value (NPV)	0.0	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	1.000	BCR=PVB/PVC