



Greater Cambridge Partnership

MAKING CONNECTIONS

Appendix S: Supplementary Economic Tables





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DS1: CONSULTATION/SCENARIO 2

ECONOMIC EFFICIENCY OF THE TRANSPORT SYSTEM (TEE)

Non-business: Commuting		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	536.4		445.4	91.0	0.0	0.0	
Vehicle operating costs	40.8		40.8			0.0	
User charges During Construction & Maintenance	-570.2		-593.0	22.8	0.0	0.0	
	0.0		0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS:	7.0	(1a)	-106.9	113.8	0.0	0.0	
Non-business: Other		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	398.3		272.3	126.0	0.0	0.0	
Vehicle operating costs	67.2		67.2			0.0	
User charges During Construction & Maintenance	-630.4		-759.0	128.6	0.0	0.0	
	0.0		0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS: OTHER	-164.9	(1b)	-419.4	254.5	0.0	0.0	
Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
User benefits							
Travel time	306.9		223.6	64.7	18.6	0.0	0.0
Vehicle operating costs	44.3		37.4	6.9			0.0
User charges During Construction & Maintenance	-1089.1		-959.9	-140.2	11.0	0.0	0.0
	0.0		0.0	0.0	0.0	0.0	0.0
Subtotal	-737.9	-2	-698.9	-68.6	29.5	0.0	0.0
Private sector provider impacts					Freight	Passengers	
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	-3			0.0	0.0	0.0
Other business impacts							
Developer contributions	0	-4	0	0	0	0	0
IMPACT	-737.9	(5) = (2) + (3) + (4)					
TOTAL							
Present Value of Transport Economic Efficiency Benefits (TEE)	-895.9	(6) = (1a) + (1b) + (5)					

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

PUBLIC ACCOUNTS (PA) TABLE

	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER
Local Government Funding					
	TOTAL	INFRASTRUCTURE			
Revenue	-2282.4	-2174.1		-108.4	0
Operating Costs	1067.0	152.9		742.3	171.9
Investment Costs	52.1	52.1		0.0	0
Developer and Other Contributions	0.0	0.0		0.0	0
Grant/Subsidy Payments	0.0	0.0		0.0	0
NET IMPACT	-1163.4 <i>-7.0</i>	-1969.2		633.9	171.9
Central Government Funding:					
Transport					
Revenue	0	0			0
Operating costs	0	0			0
Investment Costs	0	0			0
Developer and Other Contributions	0	0		0	0
Grant/Subsidy Payments	0	0		0	0
NET IMPACT	0 <i>-8</i>	0		0	0
Central Government Funding: Non-Transport					
Indirect Tax Revenues	-259.1 <i>-9</i>	-241.8		-17.3	0
TOTALS					
Broad Transport Budget	-1163.4	<i>(10) = (7) + (8)</i>			
Wider Public Finances	-259.1	<i>(11) = (9)</i>			
Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers. All entries are discounted present values in 2010 prices and values.					

ANALYSIS OF MONETISED COSTS AND BENEFITS

Noise	x	-12
Local Air Quality	x	-13
Greenhouse Gases	51.8	-14
Journey Quality		-15
Physical Activity	393.0	-16
Accidents	150.2	-17
Economic Efficiency: Consumer Users (Commuting)	7.0 (1a)	
Economic Efficiency: Consumer Users (Other)	-164.9 (1b)	
Economic Efficiency: Business Users and Providers	-737.9	-5
Wider Public Finances (Indirect Taxation Revenues)	-259.1	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	-560.0	(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
Broad Transport Budget	-1163.4	-10
Present Value of Costs (see notes) (PVC)	-1163.4	(PVC) = (10)
OVERALL IMPACTS		
Net Present Value (NPV)	603.4	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	0.5	BCR=PVB/PVC

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.

DS7: SCENARIO 1

ECONOMIC EFFICIENCY OF THE TRANSPORT SYSTEM (TEE)

Non-business: Commuting		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	442.4		389.9	52.5	0.0	0.0	
Vehicle operating costs	30.8		30.8			0.0	
User charges	-487.3		-511.9	24.6	0.0	0.0	
During Construction & Maintenance	0.0		0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS:	-14.1	<i>(1a)</i>	-91.2	77.0	0.0	0.0	
Non-business: Other		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	235.3		181.4	53.9	0.0	0.0	
Vehicle operating costs	27.2		27.2			0.0	
User charges	-267.5		-389.1	121.6	0.0	0.0	
During Construction & Maintenance	0.0		0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS: OTHER	-5.1	<i>(1b)</i>	-180.6	175.5	0.0	0.0	
Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
User benefits							
Travel time	219.4		158.3	49.9	11.2	0.0	0.0
Vehicle operating costs	32.0		26.9	5.1			0.0
User charges	-571.2		-497.3	-84.8	11.0	0.0	0.0
During Construction & Maintenance	0.0		0.0	0.0	0.0	0.0	0.0
Subtotal	-319.7	<i>-2</i>	-312.1	-29.8	22.2	0.0	0.0
Private sector provider impacts						Freight	Passengers
Revenue	0					0	0
Operating costs	0					0	0
Investment costs	0					0	0
Grant/subsidy	0					0	0
Subtotal	0.0	<i>-3</i>				0.0	0.0
Other business impacts							
Developer contributions	0	<i>-4</i>	0	0	0	0	0
IMPACT	-319.7	<i>(5) = (2) + (3) + (4)</i>					
TOTAL							
Present Value of Transport Economic Efficiency Benefits (TEE)	-338.9	<i>(6) = (1a) + (1b) + (5)</i>					

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

PUBLIC ACCOUNTS (PA) TABLE

	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER
Local Government Funding					
	TOTAL	INFRASTRUCTURE			
Revenue	-1359.6	-1354.9		-4.7	0
Operating Costs	594.5	122.1		394.7	77.6
Investment Costs	50.0	50.0		0.0	0
Developer and Other Contributions	0.0	0.0		0.0	0
Grant/Subsidy Payments	0.0	0.0		0.0	0
NET IMPACT	-715.2 -7	-1182.9		390.0	77.6
Central Government Funding:					
Transport					
Revenue	0	0			0
Operating costs	0	0			0
Investment Costs	0	0			0
Developer and Other Contributions	0	0		0	0
Grant/Subsidy Payments	0	0		0	0
NET IMPACT	0 -8	0		0	0
Central Government Funding: Non-Transport					
Indirect Tax Revenues	-149.7 -9	-148.2		-1.5	0
TOTALS					
Broad Transport Budget	-715.2	<i>(10) = (7) + (8)</i>			
Wider Public Finances	-149.7	<i>(11) = (9)</i>			
Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers. All entries are discounted present values in 2010 prices and values.					

ANALYSIS OF MONETISED COSTS AND BENEFITS

Noise	x	-12
Local Air Quality	x	-13
Greenhouse Gases	37.8	-14
Journey Quality		-15
Physical Activity	163.3	-16
Accidents	53.8	-17
Economic Efficiency: Consumer Users (Commuting)	-14.1 (1a)	
Economic Efficiency: Consumer Users (Other)	-5.1 (1b)	
Economic Efficiency: Business Users and Providers	-319.7	-5
Wider Public Finances (Indirect Taxation Revenues)	-149.7	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	-233.7	(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
Broad Transport Budget	-715.2	-10
Present Value of Costs (see notes) (PVC)	-715.2	(PVC) = (10)
OVERALL IMPACTS		
Net Present Value (NPV)	481.5	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	0.3	BCR=PVB/PVC

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.

DS8: SCENARIO 3

ECONOMIC EFFICIENCY OF THE TRANSPORT SYSTEM (TEE)

Non-business: Commuting		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	326.5	294.5	32.1	0.0	0.0		
Vehicle operating costs	18.6	18.6				0.0	
User charges During Construction & Maintenance	-276.9	-301.5	24.6	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS:	68.2	11.6	56.7	0.0	0.0	0.0	
(1a)							
Non-business: Other		ALL MODES	ROAD	BUS COACH	and RAIL	OTHER	
User benefits		TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	169.2	143.0	26.2	0.0	0.0	0.0	
Vehicle operating costs	22.0	22.0				0.0	
User charges During Construction & Maintenance	-111.9	-236.0	124.1	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	
NET NON-BUSINESS BENEFITS: OTHER	79.3	-71.0	150.3	0.0	0.0	0.0	
(1b)							
Business			Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
User benefits							
Travel time	164.3	119.3	37.8	7.2	0.0	0.0	0.0
Vehicle operating costs	24.3	20.3	4.0				0.0
User charges During Construction & Maintenance	-329.4	-290.8	-49.8	11.2	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	-140.8	-151.1	-8.0	18.4	0.0	0.0	0.0
Private sector provider impacts					Freight	Passengers	
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	0.0	0.0
Other business impacts							
Developer contributions	0	0	0	0	0	0	0
IMPACT	-140.8	(5) = (2) + (3) + (4)					
TOTAL							
Present Value of Transport Economic Efficiency Benefits (TEE)	6.7	(6) = (1a) + (1b) + (5)					

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

PUBLIC ACCOUNTS (PA) TABLE

	ALL MODES	ROAD	BUS and COACH	RAIL	OTHER
Local Government Funding					
	TOTAL	INFRASTRUCTURE			
Revenue	-817.0	-851.6		34.6	0
Operating Costs	486.2	121.9		298.7	65.7
Investment Costs	49.9	49.9		0.0	0
Developer and Other Contributions	0.0	0.0		0.0	0
Grant/Subsidy Payments	0.0	0.0		0.0	0
NET IMPACT	-280.8 ⁻⁷	-679.8		333.3	65.7
Central Government Funding: Transport					
Revenue	0	0			0
Operating costs	0	0			0
Investment Costs	0	0			0
Developer and Other Contributions	0	0		0	0
Grant/Subsidy Payments	0	0		0	0
NET IMPACT	0 ⁻⁸	0		0	0
Central Government Funding: Non-Transport					
Indirect Tax Revenues	-102.1 ⁻⁹	-106.2		4.0	0
TOTALS					
Broad Transport Budget	-280.8	<i>(10) = (7) + (8)</i>			
Wider Public Finances	-102.1	<i>(11) = (9)</i>			
Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers. All entries are discounted present values in 2010 prices and values.					

ANALYSIS OF MONETISED COSTS AND BENEFITS

Noise	X	-12
Local Air Quality	X	-13
Greenhouse Gases	24.8	-14
Journey Quality		-15
Physical Activity	120.9	-16
Accidents	35.2	-17
Economic Efficiency: Consumer Users (Commuting)	68.2 (1a)	
Economic Efficiency: Consumer Users (Other)	79.3 (1b)	
Economic Efficiency: Business Users and Providers	-140.8	-5
Wider Public Finances (Indirect Taxation Revenues)	-102.1	- (11) - sign changed from PA table, as PA table represents costs, not benefits
Present Value of Benefits (see notes) (PVB)	85.6	(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)
Broad Transport Budget	-280.8	-10
Present Value of Costs (see notes) (PVC)	-280.8	(PVC) = (10)
OVERALL IMPACTS		
Net Present Value (NPV)	366.4	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	-0.3	BCR=PVB/PVC

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.



APPRAISAL SUMMARY TABLES

CONSULTATION SCHEME

Appraisal Summary Table		Date produced: 20 08 2023	Contact:				
Name of scheme:	Consultation Scheme	Name					
Description of scheme:	7am to 7pm weekdays charge of £5 for cars (per day) AM Peak 2026, all-day scheme from 2027 or 2028 Maximised upgrade in public transport and sustainable transport measures	Organisation					
Scenario:		Role	Promoter/Official				
Impacts	Summary of key impacts	Assessment					
		Quantitative		Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp	
Economy	Business users & transport providers	Large journey time and vehicle operating cost savings are generated, but these are exceeded by values of user charge disbenefits. This scenario, along with Scenario 2, generate the highest level of business disbenefit.	Value of journey time changes (£)	307	-738	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
		Net journey time changes (£)					
		0 to 2min	2 to 5min	> 5min			
	Reliability impact on Business users	Business car users and especially freight trips benefit from significant improvements to journey time reliability.			71		
	Regeneration	Revenue generated will provide opportunity to invest in areas which are in need of regeneration, with reallocation of road space and investment in public spaces making them more attractive places to spend time and improving quality of life and prosperity.			Moderate Beneficial		
	Wider Impacts	Enhanced connectivity from decongestion results in productivity gains but output change under imperfect competition has an adverse impact as a result of the net increase in costs of travel.			-47		
Environmental	Noise	The Consultation Scenario (£5 charge all day) results in the greatest number of road links predicted to experience a reduction in noise level	Major beneficial: 8 road links Moderate beneficial: 39 road links Moderate adverse: 17 road links Major adverse: 8 road links		Moderate Beneficial	Slight Beneficial	
	Air Quality	Reductions in traffic will lower emissions within the study area and is anticipated to improve local air quality. This scenario will therefore generate the largest improvements.			Slight Beneficial	Large Beneficial	
	Greenhouse gases	Reductions in road traffic and smoother flow of remaining vehicles due to reduced congestion result in lower levels of emissions. This scenario generates the largest emissions reduction.	Change in non-traded carbon over 80y (CO2e)	-534	52		
			Change in traded carbon over 80y (CO2e)	N/A			
	Landscape	The Making Connections programme will not directly affect Landscape and so this impact has been considered as neutral for the purposes of this appraisal.			Neutral		
	Townscape	There will be a limited direct effect on Townscape and so this impact has been considered as neutral for the purposes of this appraisal. However, the potential reinvestment it enables, including in public realm measures to support increased active travel, may allow schemes to be progressed which may in turn bring townscape benefits.			Neutral		
	Historic Environment	There will be no direct effect on Historic Heritage and so this impact has been considered as neutral.			Neutral		
	Biodiversity	There is unlikely to be a significant direct impact on biodiversity and so this impact has been considered as neutral.			Neutral		
Water Environment	With limited infrastructure requirements, impacts on the water environment have not been assessed at this stage.			Neutral			
Social	Commuting and Other users	Large journey time and vehicle operating cost savings are generated both for car and bus users. Decongestion saves travel time for all modes while bus users also benefit from higher services frequencies and new services.	Value of journey time changes (£)	935	1043	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
		Net journey time changes (£)					
		0 to 2min	2 to 5min	> 5min			
		Reliability impact on Commuting and Other users	Commuters travelling at the busiest times will experience large improvements in journey time reliability. Traffic levels are reduced throughout the 7AM to 7PM period generating improved reliability for all road users.			76	
		Physical activity	Mode shift from car to sustainable modes results in higher levels of physical activity and generates health benefits. This value reflects only the impact of the area charge scheme, with no specific active mode measures currently represented.			303	
		Journey quality	More than 10,000 travellers are expected to benefit from improved journey quality as a result of improved bus services, less congested and therefore less stressful car travel and improved measures for active travel. However, elements of this are yet to be defined and have not been assessed in detail.			Moderate Beneficial	
		Accidents	Reductions in car vehicle kilometres will lead to lower accident numbers. This value doesn't include any allowance for investment of revenue in safety measures of reassignment of road space for active modes.			150	Moderate Beneficial
		Security	A wide range of impacts have been assessed across all modes, ranging from neutral to moderate beneficial. No adverse impacts have been forecast for any user group.			Slight Beneficial	Slight to Moderate Beneficial
		Access to services	Overall, the programme is considered to have a moderate to large beneficial effect in terms of accessibility due to the significant improvements coming forward to the public transport and active travel network. The scale of the effect is likely to vary depending upon the amount of revenue which is available to fund improvements to public transport and active travel.			Large Beneficial	Large Beneficial
Public Accounts	Affordability	The user charge will make trips less affordable though this values doesn't take into account the effect of discounts, exemptions and reimbursements (DERs) such as free days, or discounts for low income groups and local businesses. Bus users will experience improved affordability as fares are reduced. The all-day charge scenarios have the largest affordability impact. Though the monetised value is negative, once DERs are accounted for a slight beneficial impact is anticipated.			Slight Beneficial	-1720	Slight beneficial
	Severance	Slight beneficial effects are expected due to improvements to footways and cycles and reductions in vehicular traffic which would decrease the impact of severance.			Slight Beneficial		Neutral
	Option and non-use values	There will be a step change in public transport services provided, and more households will have access to the bus network. Improvements to the active travel network and wider measures are being considered to aide behaviour changes to create more opportunities for travel on currently under-served routes.				Moderate Beneficial	
	Cost to Broad Transport Budget	Income from revenues exceeds costs of implementation and operation, leaving a revenue surplus				-183	
	Indirect Tax Revenues	Mode shift from car to sustainable modes results in a reduction in tax income				-259	

SCENARIO 1

Appraisal Summary Table		Date produced: 20 08 2023	Contact:			
Name of scheme:	Scenario 1	Name				
Description of scheme:	AM and PM weekdays chargeof £5 for cars (per day) Addenbrooke's/Royal Papworth visitors and patients free Small vans charged the same as cars Reduced upgrade in public transport and sustainable transport measures	Organisation				
Scenario:		Role	Promoter/Official			
Impacts	Summary of key impacts	Assessment				
		Quantitative		Qualitative	Distributional	
		Value of journey time changes (£)		Monetary E(NPV)	7-pt scale/ vulnerable grp	
Economy	Business users & transport providers	Large journey time and vehicle operating cost savings are generated, but these are exceeded by values of user charge disbenefits. This scenario, generates a significantly reduced level of business disbenefit relative to the all-day charge scenarios.	219	-320	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
	Reliability impact on Business users	Business car users and especially freight trips benefit from significant improvements to journey time reliability.				
	Regeneration	Revenue generated will provide opportunity to invest in areas which are in need of regeneration, with reallocation of road space and investment in public spaces making them more attractive places to spend time and improving quality of life and prosperity.				
	Wider Impacts	Enhanced connectivity from decongestion results in productivity gains but output change under imperfect competition has an adverse impact as a result of the net increase in costs of travel.				
Environmental	Noise	Assessment of noise is based on Scenario 2. Impacts of Scenario 1 would be proportionally lower relative to the changes in traffic levels induced.		Moderate Beneficial	Slight Beneficial	
	Air Quality	Reductions in traffic will lower emissions within the study area and is anticipated to improve local air quality. This scenario will therefore generate an intermediate level of improvement.		Slight Beneficial	Large Beneficial	
	Greenhouse gases	Reductions in road traffic and smoother flow of remaining vehicles due to reduced congestion result in lower levels of emissions. This scenario generates a slightly reduced emissions reduction relative to the all-day charge scheme.	Change in non-traded carbon over 40y (CO2e) -471 Change in traded carbon over 40y (CO2e) N/A	38		
	Landscape	The Making Connections programme will not directly affect Landscape and so this impact has been considered as neutral for the purposes of this appraisal.		Neutral		
	Townscape	There will be a limited direct effect on Townscape and so this impact has been considered as neutral for the purposes of this appraisal. However, the potential reinvestment it enables, including in public realm measures to support increased active travel, may allow schemes to be progressed which may in turn bring townscape benefits.		Neutral		
	Historic Environment	There will be no direct effect on Historic Heritage and so this impact has been considered as neutral.		Neutral		
	Biodiversity	There is unlikely to be a significant direct impact on biodiversity and so this impact has been considered as neutral.		Neutral		
	Water Environment	With limited infrastructure requirements, impacts on the water environment have not been assessed at this stage.		Neutral		
Social	Commuting and Other users	Large journey time and vehicle operating cost savings are generated both for car and bus users. Decongestion saves travel time for all modes while bus users also benefit from higher services frequencies and new services.	Value of journey time changes (£) 678 Net journey time changes (£) 0 to 2min 2 to 5min > 5min	736	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
	Reliability impact on Commuting and Other users	Commuters travelling at the busiest times retain large improvements in journey time reliability, while interpeak impacts which are lost are less significant.		66		
	Physical activity	Mode shift from car to sustainable modes results in higher levels of physical activity and generates health benefits. This value reflects only the impact of the area charge scheme, with no specific active mode measures currently represented.		163		
	Journey quality	More than 10,000 travellers are expected to benefit from improved journey quality as a result of improved bus services, less congested and therefore less stressful car travel and improved measures for active travel. However, elements of this are yet to be defined and have not been assessed in detail.			Moderate Beneficial	
	Accidents	Reductions in car vehicle kilometres will lead to lower accident numbers. This value doesn't include any allowance for investment of revenue in safety measures of reassignment of road space for active modes.		54	Moderate Beneficial	
	Security	A wide range of impacts have been assessed across all modes, ranging from neutral to moderate beneficial. No adverse impacts have been forecast for any user group.			Slight Beneficial	Slight to Moderate Beneficial
	Access to services	Overall, the programme is considered to have a moderate to large beneficial effect in terms of accessibility due to the significant improvements coming forward to the public transport and active travel network. The scale of the effect is likely to vary depending upon the amount of revenue which is available to fund improvements to public transport and active travel.			Large Beneficial	Large Beneficial
	Affordability	The user charge will make trips less affordable though this values doesn't take into account the effect of discounts, exemptions and reimbursements (DERs) such as free days, or discounts for low income groups and local businesses. Bus users will experience improved affordability as fares are reduced. Removal of charges from the interpeak period considerably reduces this impact. Though the monetised value is negative, once DERs are accounted for a slight beneficial impact is anticipated.			Slight Beneficial	Slight beneficial
	Severance	Slight beneficial effects are expected due to improvements to footways and cycles and reductions in vehicular traffic which would decrease the impact of severance.			Slight Beneficial	Neutral
	Option and non-use values	There will be a step change in public transport services provided, and more households will have access to the bus network. Improvements to the active travel network and wider measures are being considered to aid behaviour changes to create more opportunities for travel on currently under-served routes.			Moderate Beneficial	
Public Account 19	Cost to Broad Transport Budget	Income from revenues exceeds costs of implementation and operation, leaving a revenue surplus		-715		
	Indirect Tax Revenues	Mode shift from car to sustainable modes results in a reduction in tax income		-150		

SCENARIO 2

Appraisal Summary Table			Date produced: 20 08 2023		Contact:		
Name of scheme: Scenario 2			Name				
Description of scheme: 7am to 7pm weekdays charge of £5 for cars (per day) 180 free days for first two years of STZ, 100 free days for 2028, 50 free days for 2029 Maximised upgrade in public transport and sustainable transport measures			Organisatio				
Scenario:			Role		Promoter/Official		
Impacts	Summary of key impacts		Assessment				
			Quantitative		Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Large journey time and vehicle operating cost savings are generated, but these are exceeded by values of user charge disbenefits. This scenario, along with the Consultation Scenario, generate the highest level of business disbenefit	Value of journey time changes(£)	307		-738	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)
			Net journey time changes (£)				
			0 to 2min	2 to 5min	> 5min		
	Reliability impact on Business users	Business car users and especially freight trips benefit from significant improvements to journey time reliability.				71	
	Regeneration	Revenue generated will provide opportunity to invest in areas which are in need of regeneration, with reallocation of road space and investment in public spaces making them more attractive places to spend time and improving quality of life and prosperity.			Moderate Beneficial		
	Wider Impacts	Enhanced connectivity from decongestion results in productivity gains but output change under imperfect competition has an adverse impact as a result of the net increase in costs of travel.				-47	
Environmental	Noise	Scenario 2 (£5 charge all day) results in the greatest number of road links predicted to experience a reduction in noise level	Major beneficial: 8 road links Moderate beneficial: 39 road links Moderate adverse: 17 road links Major adverse: 8 road links		Moderate Beneficial		Slight Beneficial
	Air Quality	Reductions in traffic will lower emissions within the study area and is anticipated to improve local air quality. This scenario will therefore generate the largest improvements.			Slight Beneficial		Large Beneficial
	Greenhouse gases	Reductions in road traffic and smoother flow of remaining vehicles due to reduced congestion result in lower levels of emissions. This scenario generates the largest emissions reduction.	Change in non-traded carbon over 80y (CO2e)	-534		52	
			Change in traded carbon over 80y (CO2e)	N/A			
	Landscape	The Making Connections programme will not directly affect Landscape and so this impact has been considered as neutral for the purposes of this appraisal.			Neutral		
	Townscape	There will be a limited direct effect on Townscape and so this impact has been considered as neutral for the purposes of this appraisal. However, the potential reinvestment it enables, including in public realm measures to support increased active travel, may allow schemes to be progressed which may in turn bring townscape benefits.			Neutral		
	Historic Environment	There will be no direct effect on Historic Heritage and so this impact has been considered as neutral.			Neutral		
Biodiversity	There is unlikely to be a significant direct impact on biodiversity and so this impact has been considered as neutral.			Neutral			
Water Environment	With limited infrastructure requirements, impacts on the water environment have not been assessed at this stage.			Neutral			
Social	Commuting and Other users	Large journey time and vehicle operating cost savings are generated both for car and bus users. Decongestion saves travel time for all modes while bus users also benefit from higher services frequencies and new services.	Value of journey time changes(£)	935		1043	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)
			Net journey time changes (£)				
			0 to 2min	2 to 5min	> 5min		
	Reliability impact on Commuting and Other users	Commuters travelling at the busiest times will experience large improvements in journey time reliability. Traffic levels are reduced throughout the 7AM to 7PM period generating improved reliability for all road users.				76	
	Physical activity	Mode shift from car to sustainable modes results in higher levels of physical activity and generates health benefits. This value reflects only the impact of the area charge scheme, with no specific active mode measures currently represented.				383	
	Journey quality	More than 10,000 travellers are expected to benefit from improved journey quality as a result of improved bus services, less congested and therefore less stressful car travel and improved measures for active travel. However, elements of this are yet to be defined and have not been assessed in detail.			Moderate Beneficial		
	Accidents	Reductions in car vehicle kilometres will lead to lower accident numbers. This value doesn't include any allowance for investment of revenue in safety measures of reassignment of road space for active modes.				150	Moderate Beneficial
	Security	A wide range of impacts have been assessed across all modes, ranging from neutral to moderate beneficial. No adverse impacts have been forecast for any user group.			Slight Beneficial		Slight to Moderate Beneficial
	Access to services	Overall, the programme is considered to have a moderate to large beneficial effect in terms of accessibility due to the significant improvements coming forward to the public transport and active travel network. The scale of the effect is likely to vary depending upon the amount of revenue which is available to fund improvements to public transport and active travel.			Large Beneficial		Large Beneficial
	Affordability	The user charge will make trips less affordable though this values doesn't take into account the effect of discounts, exemptions and reimbursements (DERs) such as free days, or discounts for low income groups and local businesses. Bus users will experience improved affordability as fares are reduced. The all-day charge scenarios have the largest affordability impact. Though the monetised value is negative, once DERs are accounted for a slight beneficial impact is anticipated.			Slight Beneficial	-1720	Slight beneficial
Severance	Slight beneficial effects are expected due to improvements to footways and cycles and reductions in vehicular traffic which would decrease the impact of severance.			Slight Beneficial		Neutral	
Option and non-use values	There will be a step change in public transport services provided, and more households will have access to the bus network. Improvements to the active travel network and wider measures are being considered to aide behaviour changes to create more opportunities for travel on currently under-served routes.			Moderate Beneficial			
Public Accounts	Cost to Broad Transport Budget	Income from revenues exceeds costs of implementation and operation, leading to a revenue surplus.				-1163	
	Indirect Tax Revenues	Mode shift from car to sustainable modes results in a reduction in tax income				-259	

SCENARIO 3

Appraisal Summary Table		Date produced: 20 08 2023	Contact:				
Name of scheme:	Scenario 3	Name					
Description of scheme:	AM and PM weekdays charge of £3 for cars (per day) Addenbrooke's/Royal Papworth visitors and patients free, 100 free days 2027 and 2028 Lowest level of upgrade in public transport and sustainable transport measures	Organisation					
Scenario:		Role	Promoter/Official				
Impacts	Summary of key impacts	Assessment					
		Quantitative		Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp		
Economy	Business users & transport providers	Large journey time and vehicle operating cost savings are generated, but these are exceeded by values of user charge disbenefits. This scenario, generates the lowest level of business disbenefit	Value of journey time changes (£)	164	-141	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
			Net journey time changes (£)				
			0 to 2min	2 to 5min			> 5min
	Reliability impact on Business users	Business car users and especially freight trips benefit from significant improvements to journey time reliability.			34		
	Regeneration	Revenue generated will provide opportunity to invest in areas which are in need of regeneration, with reallocation of road space and investment in public spaces making them more attractive places to spend time and improving quality of life and prosperity.			Moderate Beneficial		
	Wider Impacts	Enhanced connectivity from decongestion results in productivity gains but output change under imperfect competition has an adverse impact as a result of the net increase in costs of travel.			16		
Environmental	Noise	Scenario 3 results in the lowest number of road links predicted to experience a reduction in noise level			Moderate Beneficial	Slight Beneficial	
	Air Quality	Reductions in traffic will lower emissions within the study area and is anticipated to improve local air quality. This scenario will therefore generate the smallest improvements.			Slight Beneficial	Large Beneficial	
	Greenhouse gases	Reductions in road traffic and smoother flow of remaining vehicles due to reduced congestion result in lower levels of emissions. This scenario generates the lowest level of emissions reduction.	Change in non-traded carbon over 80y (CO2e)	TBC	25		
			Change in traded carbon over 80y (CO2e)	N/A			
	Landscape	The Making Connections programme will not directly affect Landscape and so this impact has been considered as neutral for the purposes of this appraisal.			Neutral		
	Townscape	There will be a limited direct effect on Townscape and so this impact has been considered as neutral for the purposes of this appraisal. However, the potential reinvestment it enables, including in public realm measures to support increased active travel, may allow schemes to be progressed which may in turn bring townscape benefits.			Neutral		
	Historic Environment	There will be no direct effect on Historic Heritage and so this impact has been considered as neutral.			Neutral		
	Biodiversity	There is unlikely to be a significant direct impact on biodiversity and so this impact has been considered as neutral.			Neutral		
Water Environment	With limited infrastructure requirements, impacts on the water environment have not been assessed at this stage.			Neutral			
Social	Commuting and Other users	Large journey time and vehicle operating cost savings are generated both for car and bus users. Decongestion saves travel time for all modes while bus users also benefit from higher services frequencies and new services.	Value of journey time changes (£)	498	538	Moderate Beneficial (Non-charge elements) Moderate Adverse (Charge elements)	
			Net journey time changes (£)				
			0 to 2min	2 to 5min			> 5min
		Reliability impact on Commuting and Other users	Commuters travelling at the busiest times retain most of the improvements in journey time reliability, while interpeak impacts which are lost are less significant.			53	
		Physical activity	Mode shift from car to sustainable modes results in higher levels of physical activity and generates health benefits. This value reflects only the impact of the area charge scheme, with no specific active mode measures currently represented.			121	
		Journey quality	More than 10,000 travellers are expected to benefit from improved journey quality as a result of improved bus services, less congested and therefore less stressful car travel and improved measures for active travel. However, elements of this are yet to be defined and have not been assessed in detail.			Moderate Beneficial	
		Accidents	Reductions in car vehicle kilometres will lead to lower accident numbers. This value doesn't include any allowance for investment of revenue in safety measures of reassignment of road space for active modes.			35	Moderate Beneficial
		Security	A wide range of impacts have been assessed across all modes, ranging from neutral to moderate beneficial. No adverse impacts have been forecast for any user group.			Slight Beneficial	Slight to Moderate Beneficial
		Access to services	Overall, the programme is considered to have a moderate to large beneficial effect in terms of accessibility due to the significant improvements coming forward to the public transport and active travel network. The scale of the effect is likely to vary depending upon the amount of revenue which is available to fund improvements to public transport and active travel.			Moderate Beneficial	Moderate Beneficial
		Affordability	The user charge will make trips less affordable though this values doesn't take into account the effect of discounts, exemptions and reimbursements (DERs) such as free days, or discounts for low income groups and local businesses. Bus users will experience improved affordability as fares are reduced. Removal of charges from the interpeak period and lowering the charge considerably reduce this impact. Though the monetised value is negative, once DERs are accounted for a slight beneficial impact is anticipated.			Slight Beneficial	-389
	Severance	Slight beneficial effects are expected due to improvements to footways and cycles and reductions in vehicular traffic which would decrease the impact of severance.			Slight Beneficial		Neutral
	Option and non-use values	There will be a step change in public transport services provided, and more households will have access to the bus network. Improvements to the active travel network and wider measures are being considered to aide behaviour changes to create more opportunities for travel on currently under-served routes.			Moderate Beneficial		
Public Accounts	Cost to Broad Transport Budget	Income from revenues exceeds costs of implementation and operation, leaving a revenue surplus			-281		
	Indirect Tax Revenues	Mode shift from car to sustainable modes results in a reduction in tax income			-102		



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