Bedford Borough Council, Levelling up C

60659865 - MHA PSP3 BED LUF Bid Support

Final. Active Mode Appraisal Toolkit to inform Valu
Active Travel Project
17th June 2021

Developed

Reviewed
Approved

Introduction and Objective

This spreadsheet sets out the inputs, assumptions a
The information will feed into the BBC wider LuF Bic

End

Central Kempston

ue for Money

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Working draft v1. Rohit Sharma (High level review only - not det
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nd calculation of potential monetised impacts and costs arising f

l and Project specific question responses.

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rom the Active Travel Project.

Tab
1. Inputs and Assumptions
2. Cycling Demand - by route
3. Walking Demand
4. Cost Input
5. Approach to AMAT
6. AMAT Input
7. AMAT Output

Contents
Contains all inputs and assumptions into the model
Contains calculations of the number of cyclists on routes affected by the schemes, for input into AMAT
Calculates the proportion of walking trips on the proposed scheme routes, and uplifts the base (Census 2011) walking demand on these walking routes, based on an active travel growth factor
Calculates the cost profile for the interventions for both of the appraisal periods
Outlines the packages created and scenarios identified for input into the AMAT
Collation of all the data from the previous tabs to outline the input to AMAT for each package
Output from AMAT and analysis for BCR for each Scenario

Data provided
N/A
All growth scenarios cycling demand - route level
Walking Demand (not segmented by growth)
Cost profile
N/A
Input to AMAT
Output from AMAT, data for the AST

Source

Levelling up Central Kempston - exported Census 2011 data (walking demand)

Exported from Table WU03UK (Location of usual residence and place of work by method of travel to work)

	"Area of residence"	Methods of travel to wo	At Home	ound-metro-light	Train	s-minibus-co	Taxi	Motorcycle-scooter-moped	ving a car or	nger in a car	Bicycle	On foot	Other
Census 2011	E02003631	2776	230	2	81	133	12	18	1641	171	152	325	11
Census 2011	E02003632	3123	239	3	96	153	17	20	1784	210	188	399	14
Census 2011	E02003633	3814	279	2	81	226	27	30	2290	255	189	422	13
	Total	**9713**	**748**	**7**	**288**	**512**	**56**	**68**	**5715**	**636**	**529**	**1146**	**38**

Population Data by MSOA and LSOA

	Mid-Year Population 2019		**Population**
Mid-Year Population 2019	MSOA	E02003631	5460
Mid-Year Population 2019		E02003632	5923
Mid-Year Population 2019		E02003633	9699
Mid-Year Population 2019	LSOA	E01017505	1529
Mid-Year Population 2019		E01017506	1505
Mid-Year Population 2019		E01017507	1282
Mid-Year Population 2019		E01017508	1607
Mid-Year Population 2019		E01017509	1182
Mid-Year Population 2019		E01017510	1566
Mid-Year Population 2019		E01017511	1229
Mid-Year Population 2019		E01017512	1483
Mid-Year Population 2019		E01017513	1431
Mid-Year Population 2019		E01017514	1636
Mid-Year Population 2019		E01017515	1586
Mid-Year Population 2019		E01017516	3570
Mid-Year Population 2019		E01017517	1476

Cycling Demand

Cycling demand by MSOA

		Number of cyclists (commuting)			
	Scenario	**E02003631**	**E02003632**	**E02003633**	**Total cyclists**
PCT	Total commuters (Census 2011)	2546	2884	2290	7720
PCT	Cyclists (Census 2011)	152	188	189	529
PCT	Government Target (Equality)	275	331	366	972
PCT	Government Target (near market)	277	354	373	1004
PCT	Gender equality	241	285	286	812
PCT	Go Dutch	752	879	1073	2704
PCT	Ebikes	869	995	1217	3081

Cycling demand by Route from PCT

		Scenario			
	Scheme	**Base (Census 2011)**	**Government Target (Near Market)**	**Go Dutch**	**Comments**
PCT	Kempston Mill Bridge and Back Channel Bridge Improvements and Resurfacing of Kempston Riverside Path	54	107	304	As no flows in PCT over Kempston Mill Bridge, Manor Drive (near to the bridges) has been used as a proxy. The same applies to the Kempston Riverside Path Resurfacing.
PCT	Cycle path improvements along B531 (flows on cycle path)	242	460	1218	Taken highest number of cyclists along Bedford Road, near to junction with Halsey Road
PCT	Cycle path improvements along B531 (flows on road)	18	36	98	Taken highest number of cyclists along Bedford Road, near to junction with Halsey Road
PCT	Cycle improvements along B531	260	496	1316	To use in calculations (Total Flow)

Active Travel Growth Factors

From NTEM. as local data very limited — Source: C:\AECOM Directory\Bedford Levelling Up Fund Bid - General\400 Technical\440 Active Mode Appraisal\NTEM Active Travel Growth Factors

Cycling Growth Factor 2011 to 2023	1.0552
Walking Growth Factor 2011 to 2023	1.0426

Costs

Table C - Funding Profile — Source: LUF Actions (090621 WIP) — This includes risks and contingencies

Funding Sources	**2021-22 £m**	**2022-23 £m**	**2023-24 £m**	**2024-25**	**Total £m**
UKG Funding Sought	£0.83	£3.85	£3.58	£0.00	£8.26
Local Authority Contribution	£0.11	£0.29	£0.27	£0.00	£0.68
Third Party Contribution inc W Trust £125k AND s106 £688300 = £813,300	£0.14	£0.35	£0.33	£0.00	£0.81
Total	**£1.07**	**£4.50**	**£4.18**	**£0.00**	**£9.75**

For input into cost assumptions — Conversion fac 1000

Funding Sources	**2021-22 £000s**	**2022-23 £000s**	**2023-24 £000s**	**2024-25**	**Total £000s**
UKG Funding Sought	£826.77	£3,853.59	£3,578.34	£0.00	£8,257.70
Local Authority Contribution	£113.17	£294.23	£271.60	£0.00	£679.00
Third Party Contribution **inc W Trust £125k AND s106 £688300 = £813,300**	£135.55	£352.43	£325.32	£0.00	£813.30
Total	£1,074.49	£4,500.26	£4,175.26	£0.00	£9,750.00

Scheme parameters

Scheme aspect	**Length (km)**
Kempston Mill Bridge (Pedestrian and Cyclist Only) and Back Channel Bridge - distance between	0.21
Cycle path improvements along core stretch of the B531 (between Cemetery Rd and Halsey Road)	1.48
Foot path improvements along core stretch of the B531	1.48
Improved lighting along the core stretch of the B531	1.48
Improved lighting and resurfacing the riverside path	1.882
Cycle parking	Cycle parking at Saxon Centre and Halsey Road similar to that recently (summer 2021) provided in Bedford Town Centre - secure, indoor / sheltered provision paid accessed by App.
General public realm improvements at the Saxon Centre	N/A
E-bike charging hub	N/A

Assumptions

General Assumptions for the Economic Appraisal

Bedford Borough Council	The approach and assessment adopted were guided by the time constraints to undertake the analysis The opening year is assumed to be 2023	
Bedford Borough Council	Two appraisal periods assessed: 10 years (2023-2033) and 20 years (2023-2044).	
DfT TAG	Monetised costs and benefits – 2010 prices and values, discounted to 2010 (in line with DfT TAG)	
DfT TAG	Inflation rates based on TAG Databook GDP Deflator (e.g. for financial case); real cost increases above or below inflation are used for the economic case	
NTS	Share of walking and cycling – commuting and non-commuting trips – based on National Travel Survey (NTS) 2019 data (1:2 for cycling, 1:12 for walking)	
	DS demand scenarios: No walking demand uplift has been assumed in the DS Three cycling demand scenarios: 'Sustrans'(low growth), 'Government Target (near market)' (core growth) and 'Go Dutch' (high growth)	
DfT AMAT	Average length of cycling trip (km)	4.84
DfT AMAT	Average length of walking trip (km)	1.1

Costs

Professional judgement	Assumed that all third party contributions, including The Waterways Trust £125,000 contribution, count as private contribution. All costs are accurate as of 4/6/21 from the latest "LUF Actions" Spreadsheet	
Professional judgement and AMAT Guidance	Maintenance Cost	2.5% maintenance cost every 5 years

Levelling up Central Kempston - approach to identifying uplift in cycling trips based on PCT - based on routes

Step 1: Identify commuting cycling trips from PCT for each of the routes on which will be impacted by the intervention

Source/Comment	Scheme	Scenario: Base (Census 2011)	Scenario: Government Target (Near Market)	Scenario: Go Dutch	Comments
PCT	Kempston Mill Bridge and Back Channel Bridge Improvements and Resurfacing of Kempston Riverside Path	54	107	304	As no flows in PCT over Kempston Mill Bridge, Manor Drive (near to the bridges) has been used as a proxy. The same applies to the Kempston Riverside Path Resurfacing.
PCT	Cycle improvements along B531	260	496	1316	To use in calculations (Total Flow)

Step 2: Calculate total demand including non-commuting trips

NTS	Ratio of commuting to non-commuting trips (1 to 2)	1 : 2

	Kempston Mill Bridge and Back Channel Bridge Improvements and Resurfacing of Kempston Riverside Path		*Cycle improvements along B531*	
Census 2011	Commuting Census 2011	54	Commuting Census 2011	260
	Non-commuting trips	108	Non-commuting trips	520
	Total BASE cycling trips	**162**	**Total BASE cycling trips**	**780**
PCT	Government target (near market) commuting	107	Government target (near market) commuting	496
	Non-commuting trips	214	Non-commuting trips	992
	Total CORE scenario cycling trips	**321**	**Total CORE scenario cycling trips**	**1488**
PCT	Go Dutch commuting	304	Go Dutch commuting	1316
	Go Dutch non-commuting	608	Go Dutch non-commuting	2632
	Total High Growth scenario cycling trips	**912**	**Total High Growth scenario cycling trips**	**3948**

Levelling up Central Kempston - approach to identifying uplift in cycling trips based on Sustrans Infrastructure Impact Tool (Low Growth) - based on routes

	Kempston Mill Bridge and Back Channel Bridge Improvements and Resurfacing of Kempston Riverside Path			*Cycle improvements along B531*		
2011	Commuting trips	54		Commuting trips	260	
	Non-commuting trips	108		Non-commuting trips	520	
	Total trips	162	per day	Total trips	780	per day
	Annualising for weekdays (*253)	253		Annualising for weekdays (*253)	253	
		40,986	per year		197,340	per year
Sustrans Active Toolkit	Output from Sustrans Active Toolkit	72%	uplift as a result of the scheme	Output from Sustrans Active Toolkit	72%	uplift as a result of the scheme
	Number of cycling trips post intervention	70,496		Number of cycling trips post intervention	339,425	
	Daily trips (/253) - Low Growth Scenario	**279**		Daily trips (/253) - Low Growth Scenario	**1342**	

Levelling up Central Kempston Cycling Demand Calculations - based on routes

Kempston Mill Bridge and Back Channel Bridge Improvements and Resurfacing of Kempston Riverside Path

Step 3: Identify input for AMAT (Growth to 2023)

Year	2011	Base Year (2023)
DM Cycling Trips	162	171
Core Scenario Cycling trips	321	339
High Growth Cycling Trips	912	962
Low Growth Cycling Trips	279	294

Cycle improvements along B531

Step 3: Identify input for AMAT (Growth to 2023)

Year	2011	Base Year (2023)
DM Cycling Trips	780	823
Core Scenario Cycling trips	1488	1570
High Growth Cycling Trips	3948	4166
Low Growth Cycling Trips	1342	1416

Levelling up Central Kempston Walking Demand Calculations based on LCWIP method

Source/Comment

NTS

Census 2011

Step 1: identify the mode split in commuting trips from Census 2011 at MSOA and LSOA level

Census 2011		Population	On foot
MSOA	E02003631	5460	325
Census 2011	E02003632	5923	399
	E02003633	9699	422
LSOA	E01017505	1529	103
	E01017506	1505	101
	E01017507	1282	86
	E01017508	1607	108
	E01017509	1182	70
	E01017510	1566	93
	E01017511	1229	73
	E01017512	1483	88
	E01017513	1431	62
	E01017514	1636	71
	E01017515	1586	69
	E01017516	3570	155
	E01017517	1476	64

Step 2: calculate total number of trips (both commuting and non-commuting)

Ratio of commuting to non-commuting (1 to 12)	1	12
Non-commuting proportion	11	12

Non-commuting walking trips

Census 2011		Population	On foot
MSOA	E020036	5460	3575
	E020036	5923	4389
	E020036	9699	4642
LSOA	E010175	1529	1133
	E010175	1505	1111
	E010175	1282	946
	E010175	1607	1188
	E010175	1182	770
	E010175	1566	1023
	E010175	1229	803
	E010175	1483	968
	E010175	1431	682
	E010175	1636	781
	E010175	1586	759
	E010175	3570	1705
	E010175	1476	704

TOTAL Walking Trips

Census 2011		Population	On foot
MSOA	E02003631	5460	3900
	E02003632	5923	4788
	E02003633	9699	5064
LSOA	E01017505	1529	1236
	E01017506	1505	1212
	E01017507	1282	1032
	E01017508	1607	1296
	E01017509	1182	840
	E01017510	1566	1116
	E01017511	1229	876
	E01017512	1483	1056
	E01017513	1431	744
	E01017514	1636	852
	E01017515	1586	828
	E01017516	3570	1860
	E01017517	1476	768

LSOA Population as proportion of MSOA

LSOA	Population Proportion
E01017505	0.25814621
E01017506	0.254094209
E01017507	0.216444369
E01017508	0.271315212
E01017509	0.216483516
E01017510	0.286813187
E01017511	0.225091575
E01017512	0.271611722
E01017513	0.147540984
E01017514	0.168677183
E01017515	0.163522013
E01017516	0.368079183
E01017517	0.152180637

Step 3: calculate the the proposed route length as a percentage of the total road network across LSOAs

Scheme and LSOAs	Total road length within LSOAs (km)	Total proposed route length (km)	Percentage of proposed route as compared to total network
OS Open Roads GIS **Lighting along Riverside**			
Census 2011 E01017509, E01017510, E01017511	12.446	1.882	15.12%
OS Open Roads GIS **B531 footpath improvements**			
Census 2011 E01017505, E01017508, E01017509, E01017510, E01017512, E01017514, E01017515	31.367	1.48	4.72%

Step 4: apply proportion of proposed route to walking trips

Scheme and LSOAs	Total number of walkers in LSOAs	Number walkers using proposed route
Lighting along Riverside		
Census 2011 E01017509, E01017510, E01017511	2832	428
B531 footpath improvements		
Census 2011 E01017505, E01017508, E01017509, E01017510, E01017512, E01017514, E01017515	7224	341

Step 3: growth the base walking demand based on the growth factor (based on NTEM)

NTEM Walking Growth Factor 2011 to 2023 1.0426

Proposed Route	2011	Base Year (2023)
Lighting along Riverside	428	**446**
B531 Footpath Improvements	341	**356**

Levelling up Central Kempston - Cost Assumptions

Source/Comment

Step 1: Identify funding profile compiled by BBC - from Input Tab

Funding Sources	2021-22 £000s	2022-23 £000s	2023-24 £000s	2024-25	Total £000s	Source/Comment
UKG Funding Sought	825.77	3853.593333	3578.336667	0	8257.7	Bedford Borough Council
Local Authority Contribution	113.1666667	294.2333333	271.6	0	679	Bedford Borough Council
Third Party Contribution	135.55	352.43	325.32	0	813.3	Bedford Borough Council
Total	**1074.486667**	**4500.256667**	**4175.256667**	0	9750	

Step 2: Calculate cost profile input for AMAT

See tab "Input and Assumptions" for maintenance assumptions

Year	Total intervention costs '000£	Private sector contributions '000£
2020	0	0
2021	1074.49	135.55
2022	4500.26	352.43
2023	4175.26	325.32
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	243.75	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	243.75	0
2034	0	0
2035	0	0
2036	0	0
2037	0	0
2038	243.75	0
2039	0	0
2040	0	0
2041	0	0
2042	0	0
2043	243.75	0

	Number	Schemes
To assess the following schemes in AMAT	**1**	Kempston Mill Bridge (Pedestrian and Cyclist Only)
	2	Back Channel Bridge (Pedestrian and Cyclist Only)
	11	Cycle path improvements along core stretch of the B531
	12	Foot path improvements along core stretch of the B531
	14	Improved lighting along the core stretch of the B531
	15	Improved lighting and resurfacing of the riverside path
	16	Cycle parking at Saxon Centre (secure) and Halsey Road
	13	General public realm improvements at the Saxon Centre
Interventions which ***cannot* be assessed in AMAT**		E-bike charging hub

The interventions which can be assessed have been grouped into packages based on geographical proximity to minimise the number of AMAT runs required, and reduce double counting of benefits

Packages

Package number	Interventions
1	Kempston Mill Bridge (Pedestrian and Cyclist Only)
	Back Channel Bridge (Pedestrian and Cyclist Only)
	Improved lighting and resurfacing of the riverside path
2	Cycle path improvements along core stretch of the B531
	Foot path improvements along core stretch of the B531
	Improved lighting along the core stretch of the B531
	Cycle parking at Saxon Centre (secure) and Halsey Road
	General public realm improvements at the Saxon Centre

Scenarios to be tested

Number		Scenario
1	1a	Core Growth, Package 1, 10 year Appraisal
	1b	Core Growth, Package 2, 10 year Appraisal
2	2a	Core Growth, Package 1, 20 year Appraisal
	2b	Core Growth, Package 2, 20 year Appraisal
3	3a	High Growth, Package 1, 10 year appraisal
	3b	High Growth, Package 2, 10 year appraisal
4	4a	High Growth, Package 1, 20 year appraisal
	4b	High Growth, Package 2, 20 year appraisal
5	5a	Low Growth, Package 1, 10 year appraisal
	5b	Low Growth, Package 2, 10 year appraisal
6	6a	Low Growth, Package 1, 20 year appraisal
	6b	Low Growth, Package 2, 20 year appraisal

Levelling up Central Kempston - Input for each scenario (demand)

Source/Comment

All from previous tabs

		Scenario	Walking Demand		Cycling Demand	
			Without intervention	With intervention	Without intervention	With intervention
1	1a 1b	Core Growth, Package 1, 10 year Appraisal Core Growth, Package 2, 10 year Appraisal	446 356	446 356	171 823	339 1570
2	2a 2b	Core Growth, Package 1, 20 year Appraisal Core Growth, Package 2, 20 year Appraisal	446 356	446 356	171 823	339 1570
3	3a 3b	High Growth, Package 1, 10 year appraisal High Growth, Package 2, 10 year appraisal	446 356	446 356	171 823	962 4166
4	4a 4b	High Growth, Package 1, 20 year appraisal High Growth, Package 2, 20 year appraisal	446 356	446 356	171 823	962 4166
5	5a 5b	Low Growth, Package 1, 10 year appraisal Low Growth, Package 2, 10 year appraisal	446 356	446 356	171 823	294 1416
6	6a 6b	Low Growth, Package 1, 20 year appraisal Low Growth, Package 2, 20 year appraisal	446 356	446 356	171 823	294 1416

Levelling up Central Kempston - Input for each package (answers)

			Package 1			Package 2			
		Input for AMAT		Value	Comments	Input for AMAT		Value	Comments
Cycling		How much of an average cycling trip will use the intervention?		43.22%	Calculated by dividing the length of the scheme (1.882km + 210m = 2.092km) by the average cycling trip (4.84km), as per AMAT guidance.	How much of an average cycling trip will use the intervention?		30.58%	Calculated by dividing the length of the scheme (1.48m) by the average cycling trip (4.84km), as per AMAT guidance.
		Current cycling infrastructure for this route		No Provision	structurally not sound, permanently closed = no provision. In addition, the existing Riverside Path has no cycle provision.	Current cycling infrastructure for this route		Off road cycle track	At present there is a cycle track present from Saxon Court to Addison Howard Park, but poor condition.
		Proposed new cycling infrastructure for this route		Off-road segregated cycle track	To reflect new bridges over the river and the provision of a off-road segregated cycle path along Riverside Path.	Proposed new cycling infrastructure for this route		Off road cycle track	Upgrades to existing cycle path rather than a new path, so same existing and proposed cycle infrastructure
		Are any additional shower facilities being added?		No	Not provided	Are any additional shower facilities being		No	Not provided
		Are any additional secure storage facilities being added?		No	Not provided	Are any additional secure storage facilities being added?		Yes	Cycle parking at Saxon Centre and Halsey Road similar to that recently (summer 2021) provided in Bedford Town Centre - secure, indoor / sheltered provision paid accessed by App.
Walking		How much of an average walking trip will use the intervention?		171%	Calculated by dividing the length of the scheme (1.88km) by the average walking trip (1.1km), as per AMAT guidance. **Max 100%**	How much of an average walking trip will use the intervention?		135%	Calculated by dividing the length of the scheme (1.48km) by the average walking trip (1.1km), as per AMAT guidance. **Max 100%**
	Existing		Street lighting	No			Street lighting	Yes	There is some but poor quality
			Kerb level	No			Kerb level	No	
			Crowding	No			Crowding	No	
			Pavement evenness	No			Pavement evenness	No	
			Information panels	No			Information panels	No	
			Benches	No			Benches	No	
			Directional signage	No		Existing	Directional signage	No	
	Future		Street lighting	Yes	Improved lighting		Street lighting	Yes	Upgrading existing lighting columns and at Saxon Centre Public Realm Improvements
			Kerb level	No			Kerb level	Yes	As part of footway upgrade and Saxon Centre public realm improvements
			Crowding	No			Crowding	No	
			Pavement evenness	Yes	Resurfacing		Pavement evenness	Yes	As part of footway upgrade and Saxon Centre public realm improvements
			Information panels	No			Information panels	Yes	Saxon Centre public realm improvements
			Benches	No			Benches	Yes	Saxon Centre public realm improvements
			Directional signage	No		Future	Directional signage	Yes	Saxon Centre public realm improvements

Description	Scenario	Analysis of Monetised Costs and Benefits (in £'000s)															Benefits by type		
		Congestion benefit	Infrastructure maintenance	Accident	Local air quality	Noise	Greenhouse gases	Reduced risk of premature death	Absenteeism	Journey ambience	Indirect taxation	Government costs	Private contribution	PVB	PVC	BCR	Mode shift	Health	Journey quality
Core Growth, 10 year appraisal	1a	24.6	0.1	4.4	0.6	0.3	1.0	447.6	64.7	306.4	- 3.5	6,618.2	510.2	335.8	6,618.0	0.05	28	512	306
	1b	109.4	0.7	19.8	2.8	1.3	4.3	1,990.1	287.5	2,122.4	- 15.7	6,618.2	510.2	4,011.7	6,617.5	0.61	123	2,278	2,122
	Overall	**134.0**	**0.8**	**24.2**	**3.5**	**1.6**	**5.3**	**2,437.7**	**352.2**	**2,428.7**	**- 19.2**	**6,618.2**	**510.2**	**4,857.8**	**6,618.0**	**0.73**	**150**	**2,790**	**2,429**
Core Growth, 20 year appraisal	2a	50.2	0.3	8.7	1.1	0.6	2.0	970.5	124.1	587.9	- 5.0	6,784.9	510.2	1,229.8	6,784.6	0.18	58	1,095	588
	2b	223.2	1.3	38.6	4.9	2.6	8.8	4,315.2	551.7	4,072.3	- 22.1	6,784.9	510.2	8,685.0	6,783.7	1.28	257	4,867	4,072
	Overall	**273.4**	**1.6**	**47.3**	**6.0**	**3.2**	**10.8**	**5,285.6**	**675.8**	**4,660.2**	**- 27.1**	**6,784.9**	**510.2**	**10,425.0**	**6,784.6**	**1.54**	**315**	**5,961**	**4,660**
High Growth, 10 year appraisal	3a	115.8	0.7	21.0	3.0	1.4	4.6	2,107.4	304.5	631.6	- 16.6	6,618.2	510.2	2,662.3	6,617.5	0.40	130	2,412	632
	3b	489.5	3.0	88.5	12.7	5.9	19.4	8,906.4	1,286.8	4,383.4	- 70.3	6,618.2	510.2	14,612.0	6,615.2	2.21	549	10,193	4,383
	Overall	**605.3**	**3.6**	**109.5**	**15.6**	**7.3**	**24.0**	**11,013.7**	**1,591.2**	**5,015.0**	**- 86.9**	**6,618.2**	**510.2**	**17,784.6**	**6,617.5**	**2.69**	**679**	**12,605**	**5,015**
High Growth, 20 year appraisal	4a	236.3	1.4	40.9	5.2	2.7	9.3	4,569.3	584.2	1,211.9	- 23.4	6,784.9	510.2	6,126.3	6,783.6	0.90	272	5,154	1,212
	4b	998.8	5.8	173.0	22.1	11.5	39.3	19,311.4	2,469.0	8,410.7	- 98.9	6,784.9	510.2	30,826.7	6,779.2	4.55	1,152	21,780	8,411
	Overall	**1,235.2**	**7.1**	**213.9**	**27.3**	**14.3**	**48.6**	**23,880.7**	**3,053.2**	**9,622.6**	**- 122.4**	**6,784.9**	**510.2**	**37,463.2**	**6,783.6**	**5.52**	**1,424**	**26,934**	**9,623**
Low Growth, 10 year appraisal	5a	18.0	0.1	3.3	0.5	0.2	0.7	327.7	47.3	282.9	- 2.6	6,618.2	510.2	167.8	6,618.1	0.03	20	375	283
	5b	86.8	0.5	15.7	2.2	1.0	3.4	1,579.9	228.3	1,988.2	- 12.5	6,618.2	510.2	3,382.9	6,617.6	0.51	97	1,808	1,988
	Overall	**104.8**	**0.6**	**19.0**	**2.7**	**1.3**	**4.2**	**1,907.6**	**275.6**	**2,271.1**	**- 15.0**	**6,618.2**	**510.2**	**4,060.9**	**6,618.1**	**0.61**	**118**	**2,183**	**2,271**
Low Growth, 20 year appraisal	6a	36.8	0.2	6.4	0.8	0.4	1.4	710.5	90.8	542.8	- 3.6	6,784.9	510.2	876.1	6,784.7	0.13	42	801	543
	6b	177.2	1.0	30.7	3.9	2.0	7.0	3,425.6	438.0	3,815.0	- 17.6	6,784.9	510.2	7,371.5	6,783.9	1.09	204	3,864	3,815
	Overall	**213.9**	**1.2**	**37.0**	**4.7**	**2.5**	**8.4**	**4,136.1**	**528.8**	**4,357.7**	**- 21.2**	**6,784.9**	**510.2**	**8,757.8**	**6,784.7**	**1.29**	**247**	**4,665**	**4,358**

Tables for inclusion in LuF Bid

5.4a: AMCB of Core Scenario

	Congestion benefit	Infrastructure maintenance	Accident	Local air quality	Noise	Greenhouse gases	Reduced risk of premature death	Absenteeism	Journey ambience	Total
£ (millions)	0.3	0.002	0.05	0.01	0.003	0.01	5.29	0.68	4.66	10.964
% benefit	2.49%	0.01%	0.43%	0.06%	0.03%	0.10%	48.21%	6.16%	42.50%	

A12: PVB, PVC and BCR for each of the tested scenarios

Growth	Appraisal Period	PVB	PVC	BCR
Low Growth	10 Years	4,060,910	6,618,061	0.61
Low Growth	20 Years	8,757,804	6,784,727	1.29
Core Growth	10 Years	4,857,788	6,618,021	0.73
Core Growth	**20 Years**	**10,424,977**	**6,784,649**	**1.54**
High Growth	10 Years	17,784,597	6,617,471	2.69
High Growth	20 Years	37,463,214	6,783,574	5.52

Congestion be	273.39	**0.27**
Infrastructure	1.58	**0.00**
Accident	47.34	**0.05**
Local air quali	6.04	**0.01**
Noise	3.16	**0.00**
Greenhouse g	10.76	**0.01**
Reduced risk	5,285.65	**5.29**
Absenteeism	675.79	**0.68**
Journey ambie	4,660.18	**4.66**
Private contrib	510.24704	**0.51**
Government c	6,784.94	**6.78**
		10.45