Table 1: Cost Breakdown for Arundel Options

Cost Description	Costs (millions)	
	Option A – offline dual bypass through National Park (pink/blue line)	Option B – offline dual bypass - longer to avoid National Park
Basic Cost Inputs		
Options	£4.87	£4.87
Development	£6.21	£7.25
Land	£11.82	£13.64
Construction	£104.16	£127.30
Other	£23.76	£30.03
TOTAL - no inflation, no programme risk	**£150.82**	**£183.08**
TOTAL - including inflation	**£213.00**	**£320.94**
Risk Estimates		
Increased environmental mitigation, unforeseen protected/invasive species find and/or archaeology discovery.	£6.91	£8.16
Protestor action on site	£2.64	£3.25
Additional requirements/delays resulting from interfaces with 3rd parties during construction phase e.g. Network Rail, LA, waterways, river etc, landowners, adjacent properties, site security/compound	£1.81	£2.30
Exceptional Adverse Weather during construction causes delays and additional costs.	£1.79	£2.16
Problems in sourcing labour, plant and material resources for construction works	£1.41	£1.74
TOTAL - risk cost estimates	**£14.56**	**£17.61**
Values adjusted for centrally managed risks and adjusted to present value costs		
Estimate @ outturn, including programme risk and HA scheme specific risk centrally managed	£227.26	£276.49
Deflation to 2010 values	£188.00	£228.60
Present Value Costs	£159.30	£192.70

Notes:

- The purpose, scope and approach used for the A27 Corridor Feasibility Study are set out in a Scope Document issued by the Department of Transport and the Highways Agency. This required the study to be consistent as far as possible with other feasibility studies being undertaken which also take a proportionate approach and follow the DfT's Transport Analysis Guidance (January 2014).
- The transport modelling to determine the benefits and the cost calculations were done at a high level in order to inform the decision-making process and determine whether there are any scheme options that represent value for money.
- No detailed topographic data or designs were developed to inform the cost estimates, and existing modelling tools, which were amended to improve their local validation to the areas under investigation, were applied to this study.

Table 2: Cost Breakdown for Worthing and Lancing Options

Cost Description	Costs (millions)			
	Option A - tunnels at Worthing and Lancing	Option F - online dualling improvements at Worthing and Lancing	Option G – online localised widening and junction improvements	Arundel Bypass (A) + Online dualling improvements at Worthing and Lancing (F)
Basic Cost Inputs				
Options	£12.10	£7.26	A high level cost estimate for this option was developed using inputs from outline costings developed during a previous study and were not further developed to the same level as Options A and F due to time constraints. The previous study drawn on was the *Worthing and Adur Strategic Transport Model – Strategy Development Report (March 2010)*	£12.13
Development	£49.71	£3.94		£10.15
Land	£14.27	£5.96		£17.78
Construction	£783.73	£53.92		£158.09
Other	£169.48	£6.61		£30.36
TOTAL - no inflation, no programme risk	**£1,029.29**	**£77.69**		**£228.51**
TOTAL - including inflation	**£1,507.06**	**£108.09**		**£321.09**
Risk Estimates				
Increased environmental mitigation, unforeseen protected/invasive species find and/or archaeology discovery.	£27.80	£3.38		£10.29
Protestor action on site	£26.01	£1.40		£4.04
Additional requirements/delays resulting from interfaces with 3rd parties during construction phase e.g. Network Rail, LA, waterways, river etc, landowners, adjacent properties, site security/compound	£25.85	£0.94		£2.75
Exceptional Adverse Weather during construction causes delays and additional costs.	£18.99	£0.75		£2.54
Problems in sourcing labour, plant and material resources for construction works	£14.74	£0.72		£2.12
TOTAL - risk cost estimates	**£113.39**	**£7.18**		**£21.74**
Values adjusted for centrally managed risks and adjusted to present value costs				
Estimate @ outturn, including programme risk and HA scheme specific risk centrally managed	£1,604.44	£115.74		£343.00
Deflation to 2010 values	£1,314.20	£96.50	£50.00	£284.50
Present Value Costs	£1,098.70	£82.90	£48.60	£242.30

Notes:

- The purpose, scope and approach used for the A27 Corridor Feasibility Study are set out in a Scope Document issued by the Department of Transport and the Highways Agency. This required the study to be consistent as far as possible with other feasibility studies being undertaken which also take a proportionate approach and follow the DfT's Transport Analysis Guidance (January 2014).
- The transport modelling to determine the benefits and the cost calculations were done at a high level in order to inform the decision-making process and determine whether there are any scheme options that represent value for money.
- No detailed topographic data or designs were developed to inform the cost estimates, and existing modelling tools, which were amended to improve their local validation to the areas under investigation, were applied to this study.

Table 3: Cost Breakdown for East of Lewes Options

Cost Description	Costs (millions)				
	A) Dual carriageway bypass east of Lewes	B) Single carriageway bypass east of Lewes	C) Bypass at Wilmington	D) Bypass at Selmeston	E) New road link at Folkington to East of Lewes
Basic Cost Inputs					
Options	£4.87	£4.87	£0.89	£0.52	£0.52
Development	£13.81	£11.17	£3.71	£1.60	£1.46
Land	£19.46	£17.40	£3.63	£1.67	£1.57
Construction	£232.60	£175.92	£49.43	£24.90	£24.81
Other	£50.59	£38.39	£10.15	£6.07	£4.65
TOTAL - no inflation, no programme risk	**£321.33**	**£247.75**	**£67.81**	**£34.76**	**£33.02**
TOTAL - including inflation	**£464.70**	**£352.57**	**£96.43**	**£49.28**	**£46.81**
Risk Estimates					
Increased environmental mitigation, unforeseen protected/invasive species find and/or archaeology discovery.	£14.39	£11.10	£2.99	£1.62	£1.36
Protestor action on site	£6.00	£4.50	£1.23	£0.63	£0.64
Additional requirements/delays resulting from interfaces with 3rd parties during construction phase e.g. Network Rail, LA, waterways, river etc, landowners, adjacent properties, site security/compound	£3.49	£2.70	£0.75	£0.41	£0.41
Exceptional Adverse Weather during construction causes delays and additional costs.	£3.20	£2.40	£0.66	£0.34	£0.36
Problems in sourcing labour, plant and material resources for construction works	£2.92	£2.12	£0.64	£0.32	£0.34
TOTAL - risk cost estimates	**£30.00**	**£22.81**	**£6.27**	**£3.33**	**£3.10**
Values adjusted for centrally managed risks and adjusted to present value costs					
Estimate @ outturn, including programme risk and HA scheme specific risk centrally managed	£495.29	£376.26	£103.01	£52.72	£50.03
Deflation to 2010 values	£405.30	£310.20	£85.30	£43.70	£41.50
Present Value Costs	£337.70	£261.50	£72.50	£37.20	£35.30

Notes:

- The purpose, scope and approach used for the A27 Corridor Feasibility Study are set out in a Scope Document issued by the Department of Transport and the Highways Agency. This required the study to be consistent as far as possible with other feasibility studies being undertaken which also take a proportionate approach and follow the DfT's Transport Analysis Guidance (January 2014).
- The transport modelling to determine the benefits and the cost calculations were done at a high level in order to inform the decision-making process and determine whether there are any scheme options that represent value for money.
- No detailed topographic data or designs were developed to inform the cost estimates, and existing modelling tools, which were amended to improve their local validation to the areas under investigation, were applied to this study.

Table 4: Breakdown of Benefits* included in the Stage 3 Report

Arundel Investment Case (referring to Figure 5-1 in the Stage 3 Report)

Option	Description	Travel Time	VOC Fuel	VOC Non-fuel	Indirect Tax Revenues	Greenhouse Gases	Accident Savings	PVB** (TUBA)	PVB (TUBA) - Business Users	CORE PVB	ADJUSTED*** PVB	Net journey time changes 0 to 2min	Net journey time changes 2 to 5min	Net journey time changes > 5min
Option A	Offline dual bypass through National Park	296,683	-3,714	-646	1,947	1,947	1,947	294,270	127,960	322,429	335,225	29,201	166,358	101,122
Option B	Offline dual bypass - longer to avoid National Park	295,846	-5,477	-2,192	2,885	2,885	2,885	291,062	126,852	320,139	332,825	25,796	168,000	102,049

Worthing Investment Case (referring to Figure 6-1 in the Stage 3 Report)

Option	Description	Travel Time	VOC Fuel	VOC Non-fuel	Indirect Tax Revenues	Greenhouse Gases	Accident Savings	PVB (TUBA)	PVB (TUBA) - Business Users	PVB	PVB	Net journey time changes 0 to 2min	Net journey time changes 2 to 5min	Net journey time changes > 5min
Option A	tunnels at Worthing and Lancing	1,004,259	-5,432	-7,868	2,745	2,745	2,745	993,704	429,048	1,001,256	1,044,161	159,607	238,888	605,766
Option F	online dualling improvements a Worthing and Lancing	533,073	10,198	6,290	-5,554	-5,554	-5,554	544,007	232,962	540,795	564,091	120,787	336,437	75,849
Option G	online localised widening and junction improvements	286,419	6,638	3,745	-3,583	-3,583	-3,583	293,219	124,181	291,041	303,459	167,669	118,750	0
Arundel Bypass (A) + online dualling improvements at Worthing and Lancing (F)		916,723	9,295	9,644	-5,032	-5,032	-5,032	930,630	399,706	927,726	967,697	172,828	360,538	383,358

East of Lewes Investment Case (referring to Figure 7-2 in the Stage 3 Report)

Option	Description	Travel Time	VOC Fuel	VOC Non-fuel	Indirect Tax Revenues	Greenhouse Gases	Accident Savings	PVB (TUBA)	PVB (TUBA) - Business Users	PVB	PVB	Net journey time changes 0 to 2min	Net journey time changes 2 to 5min	Net journey time changes > 5min
Option A	Dual Carriageway bypass east of Lewes	401,370	834	-1,172	-564	-564	-564	400,468	218,122	430,816	452,628	22,240	86,586	292,545
Option B	Single Carriageway bypass east of Lewes	364,153	5,296	1,787	-2,926	-2,926	-2,926	368,310	200,068	381,748	401,755	26,194	79,415	258,545
Option C	Bypass at Wilmington	166,734	4,471	2,530	-2,434	-2,434	-2,434	171,301	94,941	191,728	201,222	55,006	79,504	32,226
Option D	Bypass at Selmeston****	0	0	0	0	0	5,000	0	0	0	0	0	0	0
Option E	New road link at Folkington to East of Lewes	103,154	5,385	3,640	-2,899	-2,899	-2,899	109,280	59,441	128,880	134,824	57,064	19,654	26,435

* All values in £000, discounted to 2010
** PVB = Present Value Benefits
*** Adjusted PVB is calculated by adding 10% of the Business User Benefits as per the Value for Money Assessment: Advice Note for Local Transport Decision Makers (December 2013)[1] and described in Section 4.4. of the published Stage 3 report.
**** A bypass at Selmeston would not improve journey times due to its short length. The benefits due to safety improvements were estimated through an assessment of the accident record.

Notes:

- The purpose, scope and approach used for the A27 Corridor Feasibility Study are set out in a Scope Document issued by the Department of Transport and the Highways Agency[1]. This required the study to be consistent as far as possible with other feasibility studies being undertaken which also take a proportionate approach and follow the DfT's Transport Analysis Guidance (January 2014).
- The transport modelling to determine the benefits was done at a high level in order to inform the decision-making process and determine whether there are any scheme options that represent value for money.
- Existing modelling tools (as described in section 4.3 of the Stage 3 Report) were amended to improve their local validation to the areas under investigation before being used for the assessment of benefits.

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267296/vfm-advice-local-decision-makers.pdf