HE551524_WSP-PB_A27WL_P011_AST_v1.6.1 Option 1

Appraisal Summary Table

Date produced:	25/04/2017

Contact:	
Name	Tom Beasley
Organisation	Highways England
Role	Project Manager

Name of scheme:	A27 Worthing - Lancing Improvements
Description of scheme:	SGAR1 Price base 2010 Road Investment Strategy, March 2015, for the 2015/16 - 2019/20 Road Period: *"our aim is to address congestion at key hotspots, the delays for road users, separation of communities – notably in .....Worthing and Lancing – air pollution, and an above average number of accidents.* *A27 Worthing and Lancing improvements – improvements to the capacity of the road and junctions along the stretch of single carriageway in Worthing and narrow lane dual carriageway in Lancing. The extent and scale of the improvements, including the option of full dualling, are to be agreed in consultation with West Sussex County Council and the public."* □ Option 1 – Junction improvements only (at grade), direct access onto A27 permitted

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
		Each scenario or sensitivity test (as a minimum, the core scenario and two alternative scenarios or sensitivity tests) should form the basis for a full appraisal, including environmental and other impacts where appropriate. It is expected that the core scenario will be reported in the AST, with any exceptional outcomes of the uncertainty analysis also included. EG if there are			£(NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	*There will be journey time savings for business users as a result of implementing this option. This is because of improvements to junctions along the route.* *· the percentage of total TEE benefit during normal operation attributable to changes in business journey times and vehicle operating costs = 50.53%* *· the total vehicle hours saved by business users in opening year during normal operation = 0 person hours* *For all vehicles and trip purposes combined:* *· the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins)* *· peak hour journey time changes during construction in minutes - construction journey times not assessed*	Value of journey time changes(£): 30,144 Net journey time changes (£): 0 to 2min: 11,702; 2 to 5min: 17,449; > 5min: 993	*N/A*	*PVB £33.292m (also -13.153m construction delays - all users)*	
	Reliability impact on Business users	*Not assessed*	*N/A*	*N/A*	*PVB £m for MyRIAD based assessments* *N/A for stress based assessments.*	
	Regeneration	*Not assessed*	*N/A*	*N/A*	*N/A*	
	Wider Impacts	*Not assessed*	*N/A*	*N/A*	*N/A*	
Environmental	Noise	• Sensitive receptors along the A27 are likely to be subject to an increase in road traffic noise levels of around 1 dB due to de-congestion of the road in the long-term. However at a traffic flow growth of 1-2 % per year, it is unlikely to be perceptible in the short-term and long-term. • The 4 NIAs (215, 176, 224 and 13815) are all on the A27 and are not expected to be affected by the scheme's operation. The overall impact of Options 1 is expected to be negligible and the effect Neutral to Slight Adverse. • There are 2,537 residential receptors within 200m of the A27 Worthing and Lancing Option 1 Improvements. A further 4 sensitive receptors are found within 200m of the scheme and include 1 children's nursery, 1 hospital, 1 care home, and 1 secondary school. Distributional impact analysis is excluded at this stage		*Slight Adverse*		
	Air Quality	• Operation is expected to provide short-term air quality improvements as a result of reduced congestion, however this will be negated in the long term by predicted increases in traffic volumes along the A27 and is likely to have a neutral effect on air quality and Worthing AQMA • There are 2,537 residential receptors within 200m of the A27 Worthing and Lancing Option 1 Improvements. A further 4 sensitive receptors are found within 200m of the scheme and include 1 children's nursery, 1 hospital, 1 care home, and 1 secondary school. Distributional impact analysis is excluded at this stage		*Neutral*		
	Greenhouse gases	Greenhouse gases (carbon emissions) have been calculated using TUBA , which demostrates CO2 emission benefits as a result of this option. However, it is understood that Environment Group consider carbon emission calculations in TUBA to be inaccurate. Therefore until a detailed air quality assessment is undertaken we can only provide a qualitiative assessment advising that we expect carbon emissions to reduce, which might increase the BCR.	Change in non-traded carbon over 60y (CO2e) Change in traded carbon over 60y (CO2e)	*Likely to be positive*	*N/A*	
	Landscape	• As a result of Option 1 being improvements to junctions only and within a predominantly suburban area the scheme is expected to have minimal landscape impacts. There is potential for Slight Adverse effects for visual receptors particularly residents close to the scheme.		Slight Adverse		
	Townscape	• Option 1 comprises at-grade junction improvements at seven locations along the A27 which would have a Neutral effect on townscape. • The scheme would not have adverse effects on the layout, mix, scale, appearance, human interaction and cultural aspects of the receiving townscape. • The scheme would include environmental design measures to ensure that it would blend in well with surrounding townscape characteristics and is not visually intrusive.		*Neutral*		
	Heritage of Historic resources	• A full Webtag assessment has not been completed as only a desk based assessment and preliminary setting assessment has been completed as part of Stage 1. • Within the Worthing section of the scheme there is 1 Grade I Listed Building, 49 Grade II Listed Buildings, 6 Conservation Areas, 12 non-designated assets and 2 Archaeological Notification Areas (ANAs). In the Lancing section of the scheme, there is 1 Grade I Listed Building, 15 Grade II Listed Buildings, 1 Conservation Area, 2 non-designated assets and 1 ANA. • Particularly sensitive receptors include Salvington Conservation Area located immediately south of the A27 and 200m west of the Offington Corner Junction, where this option has potential for significant effects. • Option 1 is likely to have the least impact out of all the options due to smaller land take required, however further assessment will be undertaken at the next PCF stage.There is potential for effects of Neutral to Major Adverse Significance.		Major Adverse		
	Biodiversity	• Habitat degredation caused by increased dust deposition and reduced air quality are possible at two sites of local importance (Offington Cemetary LWS and Worthing and Hill Barn Golf Course LWS), resulting in impacts of a Moderate Adverse magnitude at these locations. • It is considered unlikely that there will be adverse impacts on any internationally or nationally designated sites, due to the distance from the scheme • Effects on statutory designated sites are all considered to be neutral. However information from detailed ecological surveys or detailed design is required to confirm if the works associated with the proposed options will result in direct impacts including habitat loss to the LWS.		Moderate Adverse		
	Water Environment	• The water environment in the study area is sensitive due to the presence of two watercourses within 1km of each section of the scheme, and due to the groundwater, particularly in the Worthing section which is in a Source Protection Zone (SPZ). • Option 1 is expected to have minimal impacts on the rivers close to the scheme, however there is potential that low significance impacts may be seen on groundwater, land drainage channels within the Lancing section, and the floodplain to the east of the Manor Road roundabout. It is expected that operational impacts can be avoided and reduced through design.		Slight Adverse		
Social	Commuting and Other users	*There will be journey time savings for consumers and other users as a result of implementing this option. This is because of improvements to junctions along the route.* *· the percentage of total TEE benefit during normal operation attributable to changes in consumers journey times and vehicle operating costs = 49.47%* *· the total vehicle hours saved by consumer users in opening year during normal operation = -30000 person hours* *For all vehicles and trip purposes combined:* *· the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins)* *· peak hour journey time changes during construction in minutes - construction journey times not assessed*	Value of journey time changes(£): 46,215 Net journey time changes (£): 0 to 2min: 9,475; 2 to 5min: 33,670; > 5min: 3,070	*N/A*	*PVB £44.227m (also -13.153m construction delays - all users)*	*No adversely affected vulnerable groups identified*
	Reliability impact on Commuting and Other users	*Not assessed*	*N/A*	*N/A*	*N/A*	
	Physical activity	*It is considered unlikely that the scheme will result in a significant impact on the amount of walking and cycling trips undertaken within the vicinity of the scheme extents and as such there would be limited or neglible impact on physical activity.*	*N/A*	*Neutral*	*N/A*	
	Journey quality	*Scheme is expected to reduce congestion and increase journey time reliability within the scheme extents. It is therefore expected to reduce driver frustatration. The proposed signalisation of three junctions (Durrington Hill, Offington Corner and Grinstead Lane junctions) is expected to reduce perception of the risk of collisions at junctions.* *As a result of Option 1 comprising improvements to junctions only and within a predominantly suburban area the scheme is expected to retain the vast majority of its visual character. The existing tree-lined character of some sections would be retained.* *There would be a reduction in journey quality during the construction phase of the project due to increased delays, and the prescence of temporary traffic management.*	*N/A*	*Slight positive.*	*N/A*	
	Accidents	*There are accident benefits associated with the scheme which have been assessed using COBALT*	*N/A*	*N/A*	*PVB £5.60m*	*N/A*
	Security	Scheme introduces improved lighting . However such improvements may be offset by increased numbers of signals as road users are thought to be more vulnerable to crime on the approaches to signals.		*Neutral*	*N/A*	*N/A*
	Access to services	*Not assessed*	*N/A*	*N/A*	*N/A*	*N/A*
	Affordability	*Not assessed*	*N/A*	*N/A*	*N/A*	*N/A*
	Severance	Scheme includes the introduction of additional signalised pedestrian crossings at 3 junctions (Durrington Hill, Offington Corner and Grinstead Lane). This brings the crossing points available to pedestrians and cyclists much closer to the desire lines and represents improved provision for pedestrians and cyclist at key nodes on A27 in Worthing and Lancing. . The scheme would have a neutral impact on existing signalised crossing points. The scheme includes local widening at junctions but no introduction of new dual carriageway sections, and therefore a limited impact on severance.	N/A	Slight positive.	N/A	*N/A*
	Option values	The scheme does not involve the loss or introduction of a new mode of transport and as such Option Values are unaffected.	*N/A*	*N/A*	*N/A*	
Public Accounts	Cost to Broad Transport Budget	*All costs are funded by central government.*	*NPV of Local Government Costs £0 m* *NPV of Central Government Costs £44.986m*	*N/A*	*PVC £44.986m*	
	Indirect Tax Revenues	*An increase in indirect tax revenues is observed as a result of the scheme.*	*NPV of change in indirect tax revenues £1.064m*	*N/A*	*PVB £1.064m* *Indirect Tax Revenues against Public Accounts (i.e. sign needs to be flipped on the ITR TUBA output. Eg if a project results in an increase in indirect tax revenue, this would appear as a negative number in the PA table, but as a positive number in the AST).*	

HE551524_WSP-PB_A27WL_P011_AST_v1.6.1 Option 3

Appraisal Summary Table

Date produced:	25/04/2017

Contact:	
Name	Tom Beasley
Organisation	Highways England
Role	Project Manager

Name of scheme:	A27 Worthing - Lancing Improvements
Description of scheme:	SGAR1 Price base 2010 Road Investment Strategy, March 2015, for the 2015/16 - 2019/20 Road Period: "our aim is to address congestion at key hotspots, the delays for road users, separation of communities – notably in .....Worthing and Lancing – air pollution, and an above average number of accidents. A27 Worthing and Lancing improvements – improvements to the capacity of the road and junctions along the stretch of single carriageway in Worthing and narrow lane dual carriageway in Lancing. The extent and scale of the improvements, including the option of full dualling, are to be agreed in consultation with West Sussex County Council and the public." □ Option 3 – Junction improvements (at grade) in conjunction with dualling. Direct access onto A27 permitted.

Impacts		Summary of key impacts	Assessment			
			Quantitative	Qualitative	Monetary	Distributional
		Each scenario or sensitivity test (as a minimum, the core scenario and two alternative scenarios or sensitivity tests) should form the basis for a full appraisal, including environmental and other impacts where appropriate. It is expected that the core scenario will be reported in the AST. with any exceptional outcomes of the uncertainty analysis also included. EG if there are			£(NPV)	7-pt scale/ vulnerable grp
Economy	Business users & transport providers	*There will be journey time savings for business users as a result of implementing this option. This is because of dualling and improvements to junctions along the route.* • *the percentage of total TEE benefit during normal operation attributable to changes in business journey times and vehicle operating costs = 51.56%* • *the total vehicle hours saved by business users in opening year during normal operation = -3000 person hours* *For all vehicles and trip purposes combined:* · *the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins)* • *peak hour journey time changes during construction in minutes - construction journey times not assessed*	Value of journey time changes(£): 29,439 Net journey time changes (£) 0 to 2min: 8,160 / 2 to 5min: 20,606 / > 5min: 673	*N/A*	*PVB £33.067m (also -13.153m construction delays - all users)*	
	Reliability impact on Business users	*Not assessed*	*N/A*	*N/A*	*N/A*	
	Regeneration	*Not assessed*	*N/A*	*N/A*	*N/A*	
	Wider Impacts	*Not assessed*	*N/A*	*N/A*	*N/A*	
Environmental	Noise	• Sensitive receptors along the A27 are likely to be subject to an increase in road traffic noise levels of around 1 dB due to de-congestion of the road in the long-term. At a traffic flow growth of 1-2 % per year, it is unlikely to be perceptible in the short-term and long-term. • Residential areas within the four NIAs on the A27 (215, 176, 224 and 13815) would potentially be affected, and properties could become eligible under the Noise Insulation Regulations. • There are 2,537 residential receptors within 200m of the A27 Option 3 Improvements, there are a further 4 sensitive receptors including 1 care home, 1 hosptial, 1 secondary school and 1 children's nursery. Distributional impact analysis is excluded at this stage		*Moderate Adverse*		
	Air Quality	• The scheme is predicted to result in smooth running traffic limiting congestion to peak periods only, therefore leading to a Slight Beneficial impact, however long-term improvements in air quality and Worthing AQMA are likely to be limited due to the predicted future growth in traffic on the A27 (up to 25% (1-2% annually)). • There are 2,537 residential receptors within 200m of the A27 Option 3 Improvements, there are a further 4 sensitive receptors including 1 care home, 1 hosptial, 1 secondary school and 1 children's nursery. Distributional impact analysis is excluded at this stage		*Slight Beneficial*		
	Greenhouse gases	Greenhouse gases (carbon emissions) have been calculated using TUBA , which demostrates CO2 emission benefits as a result of this option. However, it is understood that Environment Group consider carbon emission calculations in TUBA to be inaccurate. Therefore until a detailed air quality assessment is undertaken we can only provide a qualitiative assessment advising that we expect carbon emissions to reduce, which might increase the BCR.	Change in non-traded carbon over 60y (CO2e) Change in traded carbon over 60y (CO2e)	*Likely to be positive*	*N/A*	
	Landscape	• The Landscape and Visual effects are expected to be limited to townscape character within the vicinity of the new junctions and carriageway widening.There is expected to be Large Adverse effects on views from residential properties and Moderate Adverse Impacts on Landscape, with greater adverse effects being felt where mitigation will not be possible. • There is also potential for Large Adverse effects on the Salvington Conservation Areas as the new junction becomes the dominant feature of the view at several properties and could not be mitigated.		Large Adverse		
	Townscape	• There would be an overall Moderate adverse (negative) effect on townscape. • The scheme would have adverse effects on the layout, scale, appearance and human interaction aspects of the receiving townscape in the vicinity of the scheme; • The proposed widening would have negative effects at many residential properties adjoining the A27 following the loss of land from front gardens and dense boundary planting • Residential receptors would experience loss of visual amenity, loss of privacy (due to the proximity of the traffic and pedestrians), and the visual effects of moving traffic. • There would be noticeable loss of mature trees from within the highway boundary. The scheme would include environmental design measures to ensure it would blend in well with surrounding townscape characteristics and reduce visual intrusion.		Moderate Adverse		
	Heritage of Historic resources	• A full Webtag assessment has not been completed as only a desk based assessment and preliminary setting assessment has been completed as part of Stage 1. • Within the Worthing section of the scheme there is 1 Grade I Listed Building, 49 Grade II Listed Buildings, 6 Conservation Areas, 12 non-designated assets and 2 Archaeological Notification Areas (ANAs). In the Lancing section of the scheme, there is 1 Grade I Listed Building, 15 Grade II Listed Buildings, 1 Conservation Area, 2 non-designated assets and 1 ANA. • Particularly sensitive receptors include Salvington Conservation Area located immediately south of the A27 and 200m west of the Offington Corner Junction where this option has potential for significant effects. • Option 3 is likely to have a greater impact than Option 1 due to additional land take, and effects have the potetial to be of moderate to major advers significance. Further assessment will be undertaken at the next PCF stage.		Major Adverse		
	Biodiversity	• Habitat degredation caused by increased dust deposition and reduced air quality are possible at two sites of local importance (Offington Cemetary LWS and Worthing and Hill Barn Golf Course LWS), resulting in impacts of a Moderate Adverse magnitude at these locations. • It is considered unlikely that there will be adverse impacts on any internationally or nationally designated sites, due to the distance from the scheme • Effects on statutory designated sites are all considered to be neutral. However at this stage of the assessment process, without information from detailed ecological surveys or detailed design it is not known whether proposed works associated with the proposed options will result in direct impacts including habitat loss to the LWS.		Moderate Adverse		
	Water Environment	• The water environment in the study area is sensitive due to the presence of two watercourses within 1km of each section of the scheme, and due to the groundwater, particularly in the Worthing section which is in a Source Protection Zone (SPZ). • Option 3 is expected to have minimal impacts on the rivers close to the scheme, however low significance impacts may be seen on groundwater, land drainage channels within the Lancing section, and the floodplain to the east of the Manor Road roundabout. • Widening of the A27 will increase areas of hardstanding, and therefore the risk of surface water flooding. • It is expected that operational impacts can be avoided and reduced through design.		Slight Adverse		
Social	Commuting and Other users	*There will be journey time savings for consumers and users as a result of implementing this option. This is because of dualling and improvements to junctions along the route.* · *the percentage of total TEE benefit during normal operation attributable to changes in consumers journey times and vehicle operating costs = 48.44%* · *the total vehicle hours saved by consumer users in opening year during normal operation = -47000 person hours* *For all vehicles and trip purposes combined:* · the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins) · *peak hour journey time changes during construction in minutes - construction journey times not assessed*	Value of journey time changes(£): 49,319 Net journey time changes (£) 0 to 2min: 3,810 / 2 to 5min: 42,767 / > 5min: 2,742	*N/A*	*PVB £47.717m (also -13.153m construction delays - all users)*	*No adversely affected vulnerable groups identified*
	Reliability impact on Commuting and Other users	*Not assessed*	*N/A*	*N/A*	*N/A*	
	Physical activity	*It is considered unlikely that the scheme will result in a significant impact on the amount of walking and cycling trips undertaken within the vicinity of the scheme extents and as such there would be limited or negligible impact on physical activity.*	*N/A*	*Neutral*	*N/A*	
	Journey quality	*Scheme is expected to reduce congestion and increase journey time reliability within the scheme extents. It is therefore expected to reduce driver frustatration. The proposed signalisation of three junctions (Durrington Hill, Offington Corner and Grinstead Lane junctions) is expected to reduce perception of the risk of collisions at junctions.* *The widening proposed within Option 3 will require land-take and most trees within the highway boundary are likely to be lost, with reduced opportunity for effective mitigation. This may have a negative impact on the attractiveness of the route.* *There would be a reduction in journey quality during the construction phase of the project due to increased delays, and the prescence of temporary traffic management.*	*N/A*	Neutral	*N/A*	
	Accidents	*There are accident benefits associated with the scheme which have been assessed using COBALT*	*N/A*	*N/A*	*PVB £2.85m*	*N/A*
	Security	The scheme introduces improved lighting and CCTV monitoring arrangements. However such improvements may be offset by increased numbers of signals - road users are thought to be more vulnerable to crime on the approaches to signals.		*Neutral*	*N/A*	*N/A*
	Access to services	*Not assessed*	*N/A*	*N/A*	*N/A*	*N/A*
	Affordability	*Not assessed*	*N/A*	*N/A*	*N/A*	*N/A*
	Severance	Scheme includes the introduction of additional signalised pedestrian crossings at 3 junctions (Durrington Hill, Offington Corner and Grinstead Lane). This brings the crossing points available to pedestrians and cyclists much closer to the desire lines. The scheme has a neutral impact on existing signalised crossing points. Widening to dual carriageway throughout scheme extents is likely to result in an increase in severance in those areas where the existing arrangement is single carriageway.	N/A	Slight adverse.	N/A	*N/A*
	Option values	The scheme does not involve the loss or introduction of a new mode of transport and as such Option Values are unaffected.	*N/A*	*N/A*	*N/A*	
Public Accounts	Cost to Broad Transport Budget	*All costs are funded by central government.*	*NPV of Local Government Costs £0 m* *NPV of Central Government Costs £120.894m*	*N/A*	*PVC £120.894m*	
	Indirect Tax Revenues	*An increase in indirect tax revenues is observed as a result of the scheme.*	*NPV of change in indirect tax revenues £1.441m*	*N/A*	*PVB £1.441m* *Indirect Tax Revenues against Public Accounts (i.e. sign needs to be flipped on the ITR TUBA output. Eg if a project results in an increase in indirect tax revenue, this would appear as a negative number in the PA table, but as a positive number in the AST).*	

HE551524_WSP-PB_A27WL_P011_AST_v1.6.1 Option 3A

Appraisal Summary Table

Date produced: 25/04/2017

Contact:	
Name	Tom Beasley
Organisation	Highways England
Role	Project Manager

Name of scheme: A27 Worthing - Lancing Improvements

Description of scheme: SGAR1
Price base 2010

Road Investment Strategy, March 2015, for the 2015/16 - 2019/20 Road Period:
"our aim is to address congestion at key hotspots, the delays for road users, separation of communities – notably in .....Worthing and Lancing – air pollution, and an above average number of accidents.

A27 Worthing and Lancing improvements – improvements to the capacity of the road and junctions along the stretch of single carriageway in Worthing and narrow lane dual carriageway in Lancing. The extent and scale of the improvements, including the option of full dualling, are to be agreed in consultation with West Sussex County Council and the public."

□ Option 3A - Junction improvements (at grade) in conjunction with narrow lane (3.25m & 3m) dualling. Direct access onto A27 permitted with 2m footway on the north and 3m shared lane on the south side.

Impacts		Summary of key impacts	Assessment: Quantitative	Assessment: Qualitative	Assessment: Monetary £(NPV)	Assessment: Distributional 7-pt scale/ vulnerable grp
		Each scenario or sensitivity test (as a minimum, the core scenario and two alternative scenarios or sensitivity tests) should form the basis for a full appraisal, including environmental and other impacts where appropriate. It is expected that the core scenario will be reported in the AST, with any exceptional outcomes of the uncertainty analysis also included. EG if there are significantly different results in an alternative scenario that would affect the AST score in a particular category, then that information will be included as qualitative comments (but quantifying the difference) in the AST				
Economy	Business users & transport providers	*A statement as to whether there is an overall improvement or worsening in the transport economic efficiency of business users as a result of the scheme and the reasons why. Also include a statement of the following:* *· the percentage of total TEE benefit during normal operation attributable to changes in business journey times and vehicle operating costs = 50.90%* *· the total vehicle hours saved by business users in opening year during normal operation = -3000 person hours* *For all all vehicles and trip purposes combined:* · the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins) *· peak hour journey time changes during construction in minutes - construction journey times not assessed*	**Value of journey time changes(£)** 16,974 **Net journey time changes (£)** 0 to 2min: 1,287 / 2 to 5min: 17,501 / > 5min: - 1,814	*N/A*	*PVB £19.016m (also -13.153m construction delays - all users)*	
	Reliability impact on Business users	*A statement as to whether MyRIAD or the stress based approach has been used to assess reliability. For MyRIAD based assessments, a statement should also be provided of the nature of the reliability benefits (day to day variability, incident related variability and incident related delay) and the changes associated with the scheme which give rise to those benefits. For stress based assessments, provide an explanation of the concept of "stress".*	*N/A for MyRIAD based assessments.* *For stress based assessments, enter the percentage stress in the Do Minimum and Do Something for the key link. The Do Something stress should relate to the new route where the scheme provides a new route.*	*N/A for MyRIAD based assessments.* *For stress based assessments use the 7 point Assessment Score.*	*PVB £m for MyRIAD based assessments* *N/A for stress based assessments.*	
	Regeneration	*If a scheme does not affect any Regeneration Area (RA), then a statement to that effect should be made.* *If the scheme does affect a RA, then a statement as to whether the scheme is expected to affect job creation and/or employment levels in the RA, the reasons why and the strength of any claims of new jobs in the RA* *Where the target RA lies near to other RAs, the potential for increases in employment in the target RA to arise at the expense of other RAs may be a matter for concern. Where effects of this nature are of concern and some appreciation of them can be made, note them here.*	*Changes in the number of jobs in the RA as a result of the scheme in the forecast year; and* *Changes in the number of RA residents in employment as a result of the scheme in the forecast year.*	*N/A*	*N/A*	
	Wider Impacts	*A statement that these are not assessed for Highways Agency schemes*	*N/A*	*N/A*	*N/A*	
Environmental	Noise	*Not assessed, but likely to be similar to Option 3*			*N/A*	Moderate Adverse
	Air Quality	*Not assessed, but likely to be similar to Option 3*			*N/A*	Moderate Beneficial
	Greenhouse gases	*Greenhouse gases (carbon emissions) have been calculated using TUBA , which demostrates CO2 emission benefits as a result of this option.* *However, it is understood that Environment Group consider carbon emission calculations in TUBA to be inaccurate.* *Therefore until a detailed air quality assessment is undertaken we can only provide a qualitiative assessment advising that we expect carbon emissions to reduce, which might increase the BCR.*	Change in non-traded carbon over 60y (CO2e) Change in traded carbon over 60y (CO2e)	*Likely to be positive*	*N/A*	
	Landscape	*Not assessed, but likely to be similar to Option 3*				
	Townscape	*Not assessed, but likely to be similar to Option 3*				
	Heritage of Historic resources	*Not assessed, but likely to be similar to Option 3*				
	Biodiversity	*Not assessed, but likely to be similar to Option 3*				
	Water Environment	*Not assessed, but likely to be similar to Option 3*				
Social	Commuting and Other users	*A statement as to whether there is an overall improvement or worsening in the transport economic efficiency of consumer users as a result of the scheme and the reasons why. Also include a statement of the following:* *· the percentage of total TEE benefit during normal operation attributable to changes in consumers journey times and vehicle operating costs = 49.10%* *· the total vehicle hours saved by consumer users in opening year during normal operation = -46000 person hours* *For all all vehicles and trip purposes combined:* · the opening year peak and inter-peak journey time changes in minutes for all users combined - Route 1 A27 eastbound (AM - 1 mins, IP - 0 mins, PM - 0 mins) and Route 2 A27 westbound (AM - 3 mins, IP -1 mins, PM - 1 mins) *· peak hour journey time changes during construction in minutes - construction journey times not assessed*	**Value of journey time changes(£)** 32,426 **Net journey time changes (£)** 0 to 2min: - 3,533 / 2 to 5min: 35,980 / > 5min: - 21	*N/A*	*PVB £29.782m (also -13.153m construction delays - all users)*	*No adversely affected vulnerable groups identified*
	Reliability impact on Commuting and Other	*A statement as to whether MyRIAD or the stress based approach has been used to assess reliability. For MyRIAD based assessments, a statement should also be provided of the nature of the reliability benefits (day to day variability, incident related*	*N/A for MyRIAD based assessments.*	*N/A for MyRIAD based assessments.*	*PVB £m for MyRIAD based assessments*	
	Physical activity	*It is considered unlikely that the scheme will result in a significant impact on the amount of walking and cycling trips undertaken within the vicinity of the scheme extents and as such there would be limited or neglible impact on physical activity.*	*N/A*	*Neutral*	*N/A*	
	Journey quality	*Scheme is expected to reduce congestion and increase journey time reliability within the scheme extents. It is therefore expected to reduce driver frustatration. The proposed signalisation of three junctions (Durrington Hill, Offington Corner and Grinstead Lane junctions) is expected to reduce perception of the risk of collisions at junctions.* *The widening proposed within Option 3 will require land-take and most trees within the highway boundary are likely to be lost, with reduced opportunity for effective mitigation. This may have a negative impact on the attractiveness of the route.* *There would be a reduction in journey quality during the construction phase of the project due to increased delays, and the prescence of temporary traffic management.*	*N/A*	Neutral	*N/A*	
	Accidents	*There are accident benefits associated with the scheme which have been assessed using COBALT*	*Estimates of the difference in the number of injury accidents, and casualties by severity, over the appraisal period*	*N/A*	*PVB £2.85m*	*Assessment Score for any adversely affected vulnerable groups (ie slight, moderate or large adverse). If none, state "No vulnerable groups are adversely affected".*
	Security	Scheme introduces improved lighting and CCTV monitoring arrangements. However such improvements may be offset by increased numbers of signals - road users are thought to be more vulnerable to crime on the approaches to signals.		*Neutral*	*N/A*	*Assessment Score for any adversely affected vulnerable groups (ie slight, moderate or large adverse). If none, state "No vulnerable groups are adversely affected".*
	Access to services	*A statement summarising the public transport accesibility impacts of the scheme*	*N/A*	*7 point Overall Assessment Score*	*N/A*	*Assessment Score for any adversely affected vulnerable groups, including the lowest income quintile (ie slight, moderate or large adverse). If none, state "No vulnerable groups are adversely affected".*
	Affordability	*Summarise the findings of the SDI Analysis, including the impact on income quintile groups by mode and (where different modes are affected), the overall impact on income quintile groups ie across all modes combined.*	*N/A*	*7 point Overall Assessment Score*	*N/A*	*Assessment Score for any adversely affected vulnerable groups, including the lowest income quintile (ie slight, moderate or large adverse). If none, state "No vulnerable groups are adversely affected".*
	Severance	Scheme includes the introduction of additional signalised pedestrian crossings at 3 junctions (Durrington Hill, Offington Corner and Grinstead Lane). This brings the crossing points available to pedestrians and cyclists much closer to the desire lines. The scheme has a neutral impact on existing signalised crossing points. Widening to dual carriageway throughout scheme extents is likely to result in an increase in severance in those areas where the existing arrangement is single carriageway.	N/A	Slight adverse.	N/A	*Assessment Score for any adversely affected vulnerable groups (ie slight, moderate or large adverse). If none, state "No vulnerable groups are adversely affected".*
	Option values	The scheme does not involve the loss or introduction of a new mode of transport and as such Option Values are unaffected.	*N/A*	*N/A*	*N/A*	
Public Accounts	Cost to Broad Transport Budget	*A statement describing the components of costs to local and central government from the Public Accounts Table.*	*NPV of Local Government Costs £0 m* *NPV of Central Government Costs £73.920m*	*N/A*	*PVC £73.920m*	
	Indirect Tax Revenues	*An increase in indirect tax revenues is observed as a result of the scheme.*	*NPV of change in indirect tax revenues £0.395m*	*N/A*	*PVB £0.395m* *Indirect Tax Revenues against Public Accounts (i.e. sign needs to be flipped on the ITR TUBA output. Eg if a project results in an increase in indirect tax revenue, this would appear as a negative number in the PA table, but as a positive number in the AST).*	