



Thames Valley Berkshire Local Economic Partnership

Independent Assessment Summary Report: Coral Reef Junction Improvement

Business Case Independent Assessment

Report No. RT-A087383-02

WYG
Executive Park
Avalon Way
Anstey
Leicester
LE7 7GR

16th July 2014
Copyright © WYG EPT Ltd 2014

REPORT CONTROL

Document: Business Case Independent Assessment

Project: Coral Reef Junction Improvement

Client: Thames Valley Berkshire Local Enterprise Partnership

Job Number: A087383

File Origin:

Document Checking:

Primary Author	Jethro Punter	Initialled:	JP
----------------	---------------	-------------	----

Contributor	Gabriel Davis	Initialled:	GD
-------------	---------------	-------------	----

Review By	Colin Shields	Initialled:	CS
-----------	---------------	-------------	----

Issue	Date	Status	Checked for Issue
1	14.07.14	Draft	CS
2	15.07.14	Issued	CS
3	16.07.14	Reissue	CS
4			



Contents

1	Executive Summary	1
2	Process.....	3
3	Submitted Information.....	4
4	Review	5
5	Summary and Recommendations	10

Appendices

Appendix A – Business Case Checklist

1 Executive Summary

- 1.1 This technical note provides an independent review of the Coral Reef Junction Improvement business case submission to the Thames Valley Berkshire Local Enterprise Partnership.

SCHEME SUMMARY

- 1.2 The proposed scheme consists of changes to the Coral Reef roundabout junction, located at the intersection of the A322 with the B3430 and Nine Mile Ride, to form a new signal controlled crossroads.
- 1.3 The scheme forms part of a series of junction improvements on the A322 / A329 corridor linking the M3 and M4 through Bracknell.

REVIEW FINDINGS

- 1.4 The review of the submitted business case identified the following:
- 1.5 Whilst the modelling approach taken in this case is relatively basic (based upon combined peak hour delay savings using individual junction models), it is considered to be reasonable / proportional for the type and complexity of the scheme in question, also taking into account the value of the scheme (with a total scheme cost of less than £5,000,000).
- 1.5.1 The predicted overall Benefit to Cost Ratio (BCR) of the scheme is detailed within the submitted draft business case as 5.92, which represents a 'Very High' Value for Money scheme.
- 1.5.2 As part of the review process a sensitivity test was requested, assessing the impacts of lower flows through the junction, this additional test resulted in a BCR value of 2.65, which would represent a 'High' Value for Money scheme.
- 1.5.3 The scheme is considered to benefit from limited constraints on delivery, (although it should be noted that this review is not intended to provide an assessment of the proposed scheme design), being located within the existing highway and away from sensitive receptors such as residential dwellings.

- 1.6 The business case as submitted is however incomplete in some areas and will require updating in order to be considered suitable for final submission. As such, whilst the information submitted demonstrates that the scheme presents a value for money scheme with limited constraints upon delivery, it is not possible to fully recommend the business case as submitted.
- 1.7 It is however considered that the underlying case for the scheme appears positive and as such a conditional approval subject to addressing areas of outstanding detail within the submitted case may be appropriate.

2 Process

MEETINGS

- 2.1 An initial project inception meeting was held at Bracknell Forest Borough Council's offices on the 21st May 2014 to introduce the scheme and to discuss the timescales and requirements for the full business case submission.

OPTION ASSESSMENT REPORT / APPRAISAL SPECIFICATION REPORT

- 2.2 Due to the limited scale and complexity of the scheme the submission of a formal Options Assessment Report and Appraisal Specification Report was not considered to be proportionate. However, an option sifting summary based upon the use of the DfT East process, (Early Assessment and Sifting Tool), was discussed and has been provided as part of the draft business case submission.

REVIEW

- 2.3 Following the review of the Appraisal Specification Report a draft of the full business case was submitted for review on the 9th July 2014, with the information provided (including all supporting appendices and figures) summarised in Section 3. Section 4 then provides a summary of the review findings.

3 Submitted Information

3.1 The Business Case independent assessment was carried out based upon the following reports and appendices submitted by Bracknell Forest Borough Council:

- Draft Coral Reef Business Case dated 09.07.2014
- Appendix A – EAST appraisal of scheme options
- Appendix B – Report Extract Modelling Assumptions
- Appendix C – Existing Junction ARCADY model results
- Appendix D – Proposed Junction LINSIG outputs
- Appendix E – Bill of quantities
- Appendix F – Section 106 contributions
- Appendix G – Bracknell Borough Council Capital Programme
- Appendix H – Project Programme
- Figure 1 – Regional Plan
- Figure 2 – Local Plan
- Figure 3 – A322-A329
- Figure 4 – Signalised Roundabout Concept Option
- Figure 5 – Concept Option 2
- Figure 6 – Concept Option 3
- Figure 7 – Concept Option 4
- Figure 8 – Preferred Final Concept

4 Review

OPTIONS ASSESSMENT

- 4.1 Appendix A of the submitted business case provides a summary of the option assessment process undertaken covering option sifting based upon the DfT's EAST methodology.
- 4.2 The scheme proposed for current funding is understood to represent the most deliverable and lowest cost of the signal controlled crossroad options, whilst the signalised roundabout option was understood to have been discounted due to concerns over limited internal storage for queuing traffic within the circulatory.
- 4.3 The options assessment undertaken does not fully assess each of the potential options against the 5 cases, but provides a reasonable approach to option assessment for a scheme of this scale and type, following a recognised DfT sifting process.

APPROACH TO MODELLING

- 4.4 The approach to modelling the impacts of the Coral Reef junction improvement scheme was discussed at the Project Inception meeting (held at the Bracknell Forest Borough Council Officers on the 21st May 2014).
- 4.5 The main impacts of the scheme have been assessed based upon direct comparison of junction delay before and after the proposed improvement using the industry standard software ARCADY (for the assessment of the existing roundabout junction) and LINSIG (for the assessment of the proposed signal improvement scheme).
- 4.6 Flows for the modelling were obtained from two sources:
- 2013 baseline flows – understood to be based upon traffic counts undertaken at the existing Coral Reef Junction.
 - 2026 forecast flows – understood to be based upon forecast flows, which include additional growth planned to 2026, taken from the Bracknell Forest Multi-Modal Transport Model (BMMTM).
- 4.7 Additional information has been provided from the BMMTM model to show reductions in traffic levels on parallel corridors as a result of the improvement scheme. However, the benefits of

these changes have not been taken into account within the draft business case, other than supporting qualitative commentary with regards to potential wider scheme benefits.

- 4.8 Following discussions with the Project Team at Bracknell Forest it was understood that there was some concern that the VISUM model was not fully representing delays at the Coral Reef junction and as such inducing greater levels of traffic than would otherwise be the case, leading to greater levels of predicted delay within the ARCADY model.
- 4.9 As such a sensitivity test was requested in which the 2026 forecast flows through the junction were reduced by 10% in order to provide a further check on the potential delay savings which could be achieved as a result of the proposed scheme. This was considered to represent a robust further check, resulting in levels of combined peak hour delay similar to the 2013 baseline traffic scenario (which was based on observed counts and therefore not influenced by any assumptions within the VISUM model).
- 4.10 It can be reasonably expected that traffic levels and associated delay would increase between the 2013 base and the 2026 forecast, therefore increasing the benefits of the scheme.
- 4.11 This review is based upon the assumption that the preparation of the detailed junction models has been undertaken in a reasonable manner and is not intended as a detailed review of the junction models themselves; although a check of the flows input into both models has been carried out confirming that consistent flows and turning movements have been used for both the existing and proposed junction arrangement.

BUSINESS CASE

Format and Content

- 4.12 The submitted business case covers a number of the main categories expected for a scheme of this scale. A business case checklist is provided as Appendix A.
- 4.13 This checklist confirms whether each of the expected sub-sections within the 5 cases have been adequately covered within the submitted business case and provides explanatory notes where a specific area may not be fully addressed.
- 4.14 As noted in the summary checklist and also in the appraisal summary provided as Table 1 (following page), there are currently a number of omissions within the submission and also

areas where further clarifications are required. As such the business case as submitted cannot be considered complete.

- 4.15 However, the core elements of the Business Case are considered sufficient to demonstrate a sound case in terms of expected value for money, risk and deliverability, as outlined in the following sections of this review.

Value for Money

- 4.16 The draft submitted Business Case details a Benefit to Cost Ratio (BCR) for the Coral Reef Junction Improvement project of 5.92, which represents a 'Very High' Value for Money scheme.
- 4.17 As detailed in paragraph 4.9 a sensitivity test was also requested based upon reduced traffic flows (10% reductions in the 2026 forecast flows). This sensitivity test resulted in reduced overall levels of predicted congestion within the ARCADY modelling of the existing roundabout and therefore reduces the benefits of the planned scheme. Whilst a revised BCR has not been submitted by the scheme promoter at this point, an initial check using standard values of time over a 60 year assessment period, based upon changes in total junction delay, would suggest BCR values in the order of 2.65 would be achieved over a 60 year assessment period. This would represent a 'High' value for money scheme (source 'Value for Money Assessment: Advice Note for Local Transport Decision Makers – Dec 2013).
- 4.18 As detailed previously, reducing the levels of traffic through the junction by 10% results in levels of overall combined peak hour delay of a similar magnitude to those detailed within the 2013 baseline (based on traffic counts). As such this could be considered an absolute worst case, with the expected benefits of the scheme therefore likely to be well above this worst case scenario.

Appraisal Summary

- 4.19 A review of the appraisal summary contained within the business case submission is provided in Table 1 on the following page, areas where the review disagrees or queries the proposed level of benefit or disbenefit associated with the Coral Reef Junction Improvement scheme are detailed and explanatory notes provided.

Table 1 - Appraisal Summary

Category	Sub-category	Business Case Assessment	Agree / Disagree with Assessment	Notes
Economy	Business users & transport providers	Beneficial	Agreed	Needs updating with more information in AST to clarify extent of benefit (will have to cover other road users due to modelling approach)
	Reliability impact on Business users	Beneficial	Agreed	Needs updating with more information in AST to clarify extent of benefit (will have to cover other road users due to modelling approach)
	Regeneration	Neutral	Agreed	
	Wider Impacts	Beneficial	Agreed	Agreed that scheme is beneficial, although as no direct relationship to development sites would suggest 7 point scale and 'slight beneficial'
Environmental	Noise	Neutral	Further information required	Changes in flows / speeds are limited on most routes, but some routes will experience changes in flows over 25%, therefore some further information on local receptors required (i.e. any within 300m of highway).
	Air Quality	Slight beneficial	Further information required	Requires confirmation that there are no properties within 50m of the edge of carriageway and / or change in AADT is predicted to be less than 700 vehicles.
	Greenhouse gases	Neutral	Agreed	Qualitative assessment only - lower levels of queuing potentially offset by stationary traffic at lights.
	Landscape	Slight adverse	Agreed	Scheme is entirely within highway but includes installation of traffic signals, so cannot be classed as neutral.
	Townscape	Slight adverse	Agreed	Scheme is entirely within highway but includes installation of traffic signals, so cannot be classed as neutral.
	Historic Environment	Neutral	Agreed	
	Biodiversity	Neutral	Agreed	
	Water Environment	Neutral	Agreed	
Social	Commuting and Other users	Beneficial	Agreed	Needs updating with more information in AST to clarify extent of benefit (will have to cover other road users due to modelling approach)
	Reliability impact on Commuting and Other users	Beneficial	Agreed	Needs updating with more information in AST to clarify extent of benefit (will have to cover other road users due to modelling approach)
	Physical activity	Neutral	Agreed	

Category	Sub-category	Business Case Assessment	Agree / Disagree with Assessment	Notes
Social	Journey quality	Beneficial	Disagree	Will improve journey reliability and may improve safety – suggest use of 7 point scale and 'Slight beneficial'
	Accidents	Beneficial	Further information required	Qualitative review suggests that there may be accident savings by changing junction form – further information would be required to evidence this.
	Security		Agreed	
	Access to services		Agreed	
	Affordability		Agreed	
	Severance		Agreed	
	Option and non-use values		Agreed	
Public Accounts	Cost to Broad Transport Budget		Further information required	
	Indirect Tax Revenues		Further information required	

Risks

- 4.20 The submitted business case includes a Quantified Risk Assessment, which provides a detailed breakdown of the project risks and associated weighted costs relevant to the project.
- 4.21 A review of the Quantified Risk Assessment suggests that the risk allowances are generally reasonable, although an increase in the risk allowance for changes in statutory undertaker diversion costs would be recommended.

5 Summary and Recommendations

- 5.1 Based upon the information submitted to date, as detailed in Section 3 of this review and subsequent discussions with the scheme promoter it is considered that the underlying case for the scheme is good, with a 'Very High' scheme Benefit to Cost Ratio and with a worst case assessment still resulting in a scheme predicted to provide 'High' value for money.
- 5.2 Information submitted also demonstrates that the scheme is deliverable, with no identified constraints in terms of land requirements, limited environmental impacts and with little adjacent developed land, reducing the likelihood of local concerns or objections to the scheme.
- 5.3 However, at present the business case cannot be considered as complete, with a number of areas of further information or clarification required.
- 5.4 As such it is the recommendation of this review that the business case for the Coral Reef junction improvement could be considered suitable for conditional, rather than full, approval.
- 5.5 This is on the basis that there is confidence that scheme will provide a deliverable and value for money scheme, but that there will be a requirement to submit additional information before the business case can be fully signed off.



Appendix A – Business Case Checklist

Project Number: A087383-02
 Scheme: Coral Reef Junction
 Submitted by: Bracknell Forest Borough Council

Strategic Case	Addressed within Business Case	Notes	Economic Case	Addressed within Business Case	Notes	Financial Case	Addressed within Business Case	Notes	Commercial Case	Addressed within Business Case	Notes	Management Case	Addressed within Business Case	Notes
Business Strategy	Partially	General note that the text needs splitting between the main headings	Options appraised	Y		Costs	Y		Output based specification	N	General note that the text needs clearly defining and splitting between the main headings	Evidence of similar projects	Y	General note that the text needs clearly defining and splitting between the main headings
Problem Identified	Partially		Assumptions	Y	Provided as Appendix B	Budgets / Funding Cover	Y	Clarification required on overall scheme costs	Procurement Strategy	Y		Programme / Project dependencies	N	
Impact of not changing	Y		Sensitivity and Risk Profile		N	Accounting Implications	N		Sourcing Options	Y		Governance	Y	
Drivers for change	N		Appraisal Summary Table	N	Partial provided to scope out neutral impacts, but full AST needs providing Appended to submission				Payment Mechanisms	N		Programme / Project Plan	Y	
Objectives	N		Value for Money Statement	Y	General note that the text needs splitting between the main headings				Pricing Framework and charging mechanisms	Partially		Assurances and approvals	N	
Measures for success	N								Risk allocation and transfer	Partially		Communication & Stakeholders	Y	
Scope	N								Contract length	N		Project Reporting	N	
Constraints	N								Human resource issues	N		Implementation	N	
Inter-dependencies	Y								Contract management	N		Key Issues	N	
Stakeholders	N											Contract Management	Partially	
Options	Y									Risk Management	Y			
										Benefits realisation	N			
										Monitoring and evaluation	Partially			
										Contingency	N			
										Options	N			