



Thames Valley Berkshire Local Enterprise Partnership

## **Independent Assessment Summary Report: South Reading Mass Rapid Transit**

Business Case Independent Assessment

Report No. RT-A087383-15

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# 1 Executive Summary

- 1.1 This technical note provides an independent review of the South Reading Mass Rapid Transit Business Case submission to the Thames Valley Berkshire Local Enterprise Partnership.

## SCHEME SUMMARY

- 1.2 The South Reading Mass Rapid Transit scheme provides a series of new and improved bus priority measure on the A33. It will link central Reading to existing/proposed residential and employment areas to the south of Reading including Green Park and the new Mere oak Park and Ride facility due for delivery in 2014/15.
- 1.3 The scheme is split into two phases. Phase 1 of the scheme runs between M4 junction 11 and A33 junction with Longwater Avenue (Green Park), whilst Phase 2 runs between the A33 junctions with Longwater Avenue (Green Park) and Island Road.

## REVIEW FINDINGS

- 1.4 A number of further clarifications and requests for information were required and these have been provided in subsequent conversations.
- 1.5 Prior to acceptance of the BC the following single remaining item is required be taken into account when considering the overall benefits of the scheme:
- i) The modal shift as predicted by the Logit model is based on Before Scheme highway costs and After Scheme public transport costs. This is inconsistent as both sets of costs for the choice model should be consistent After Scheme costs. This is likely to over-estimate the modal-shift due to the scheme and therefore over-estimate the scheme benefits, possibly to a material degree. It is required that this inconsistency is addressed to robustly assess the scheme benefits.
- 1.6 The predicted initial Benefit to Cost Ratio (BCR) of the total package is reported to be 3.28, which represents high Value for Money (VfM), although note the preceding paragraph above.
- 1.7 Therefore, it is not possible to fully recommend the Business Case as submitted; and it is considered that the Business Case will require updating in line with point i) above in order to be considered suitable for final submission. At this stage, a conditional approval subject to



addressing the requirements raised in this document, and subject to the scheme still representing High VfM, is considered to be an appropriate way forward.

## 2 Submitted Information

2.1 The Business Case independent assessment was carried out based upon the following reports and appendices submitted by West Berkshire Council and their consultant team (PBA):

1. Options Assessment Report (OAR) version 2; inclusive of
  - Appendix A (supplied separately);
  - Appendix B (supplied separately);
  - Appendix C (supplied separately);
  - Appendix D (supplied separately);
  - Appendix E (supplied separately).
2. Appraisal Specification Report (ASR) version 3; inclusive of
  - Appendix A - Appraisal Specification Summary Table;
  - Appendix B - Demand Model Report;
  - Appendix C - A33 Corridor SATURN Model - Model Development Report;
  - Appendix D - VISSIM Model Technical Note.
3. South Reading Mass Rapid Transit Phase 1 & 2 final Business Case (February 2015) version 3.0; inclusive of
  - Appendix A – Scheme Drawings;
  - Appendix B – Modelling and Appraisal Report;
  - Appendix C – TEE Table;
  - Appendix D – Public Accounts;
  - Appendix E – AMCB Table;
  - Appendix F – Appraisal Summary Table;
  - Appendix G – Key Issues for Implementation;
  - Appendix H – Quantified Risk Assessment;
  - Appendix I - Project Programme.

### **Previous Comments**

- 2.2 In March 2015, WYG reviewed the first Business Case submission for the SRMRT. The March review found and reported upon a number of shortcomings in the documents that was submitted at that time.
- 2.3 This October 2015 report reviews the updated Business Case and newly submitted documents and takes into account of the previous review.



### 3 Option Assessment Report - Review

- 3.1 The Option Assessment Report represents the core document that develops the process of identifying the need for intervention and the process of option development and selection in the Strategic Outline Business Case.

#### FIRST REVIEW

- 3.2 This following paragraphs review the OAR against WebTAG guidance, referring the appraisal process to the steps 1 to 8 reported in the WebTAG guidance.
- 3.3 We believe that the OAR potentially includes most of the elements necessary and sufficient to proceed in order to get to Stage 2 and 3 (further appraisal) although they have not been related to one another properly, according to WebTAG - The Transport Appraisal Process, and the assessment and produced results need to be clarified as well. Furthermore, the document is not clear because it contains contradictions mainly due to the introduction of the new parts which conflicts with the previous content; in addition, the steps that describe all the appraisal process have not been carried out properly, according to WebTAG. Therefore, it is required that the structure of the document be revised as recommended below, adding the missing parts and using previous work and the policy context in the suggested way.
- 3.4 According to WebTAG guidance, the policy context should be carried out in steps 1 and 2 of the process as explanatory of the Current and Future Situation. Therefore we suggest the policy context section treated in Chapter 3 be used to carry out Steps 1 and 2 of the process and reported in the first chapters along with the Current and Future Situation in the study area and before defining the need of interventions and the objectives. We also deem that more detailed descriptions regarding current and future situations should be provided as to introduce Step 3.
- 3.5 Regarding Step 3 of the process (Establishing the Need for Interventions), given the situation described in Steps 1 and 2, the primary problems should be defined and underlined. These problems are to be the ones which are to be solved/mitigated through the accomplishment of the objectives, and to which the scheme proposed in the following paragraphs should appear to be the best solution after the multi-criteria analysis at the end of the FBC.

- 3.6 In Step 4a (Identifying Objectives), the objectives to mitigate/solve the issues mentioned in the previous paragraphs are to be identified, also citing how they are coherent with the policy presented previously. In chapter 3, instead, it has been reported the objectives related to the SRMRT scheme, which was supposed not to be selected yet as the chosen option; furthermore, later it is implied that the primary necessity is to improve the connectivity of central Reading with the key employment and development sites along the A33 Corridor for public transport but it has not been explained how it has been come to that objective. The objectives should be used to generate the options and can be correlated with the criteria used to sift the options in the next paragraphs and, as such, regard the EAST macro criteria.
- 3.7 In step 4b, it should be defined the specific geographic area explaining the key role of that corridor in accomplishing the objectives and how it is related to the connected network (the connected network, including the alternatives corridors/routes, cannot be discarded in this phase if they regard the issues mentioned in the previous paragraphs, because they can take part in the sifting process). The area of impact will be important in Step 5 – Generating Options – in terms of bounding the scope of any options being generated.
- 3.8 In the chapter 4, regarding Option Assessment, the previous works mentioned for the sifting process have different objectives, do not solve the same problems and regard different study areas; therefore, they cannot be utilised directly to address the Generating Options step (step 5). However, all the previous works can be cited to generate the options, explaining how the results evidence the efficacy of the proposed options against the objectives previously defined.
- 3.9 Regarding Strategic Option Assessment against Objectives, reported in paragraph 4.2, processes of options generation and sifting have been somehow carried out (steps 5 and 6) although in Paragraph 4.2.5 it has been stated that the sifting option was not considered necessary (and also in the introductory paragraphs it was stated that the sifting process had been accomplished through previous studies). At the end of the process, the only non-guided bus rapid transit scheme has been taken forward, without explaining - for instance - why the option Guided Bus Transit (Off-line) has been discarded. The number of generated options must be reconsidered (e.g. the simple bus service improvement option has not been taken into consideration in the table) and the generated schemes must be better described, including the description of the modifications respect to the existing layout (lanes width, MRT vehicles characteristics). The paragraph 1.1.5 of the Transport Appraisal Process - WebTAG, in fact, states:

- *There must be consideration of genuine, discrete options, and not an assessment of a previously selected option against some clearly inferior alternatives. A range of solutions should be considered across networks and modes.*

- 3.10 Furthermore, the EAST table has not been used as recommended and the evaluation criteria used in 4.2.5 for the process of sifting has not been referred to the same criteria. It has been stated that the criteria regarded only the process of generation, but actually at the end, a process of sifting has been accomplished.
- 3.11 In order to address WebTAG guidance we recommend that regarding step 5, for the process of generation, all the previous work be cited to generate the options, explaining how the results evidence the efficacy of the proposed options.
- 3.12 With regard to the multi-criteria table (Table 4-2, paragraph 4.2.2 in the OAR) used to sift the options, explanation regarding the reason that have lead to a sifting process different from the WebTAG guidance suggestion, without using the EAST table must be provided. In addition, the relationship between the criteria in the document and the macro criteria utilized in EAST (e.g. 'Support economic development on the A33 Corridor and Reading' with 'Strategic'; in some cases, this correlation might require disaggregation and re aggregation) is required. Moreover, we suggest including all the available possibilities (e.g. the simple bus service improvement option, strategic traffic management involving other routes, etc.), including the ones used in previous works (of which it would be possible to take and use the results to fill in the table). A possibility can be to consider also the two alternatives mentioned in paragraph 4.3 with the other options in this step and then evaluate them in step 7. Also environmental consideration should be taken into account in this process, as mentioned in the Appendix A of the Guidance for the Technical Project Manager.
- 3.13 At the end of Step 6, some options must be selected from the results of the multi-criteria assessment described in step 6 (e.g. the two alternatives mentioned and a low cost solution against the 'without scheme' scenario).
- 3.14 In Step 7, the remaining options are supposed to be compared and evaluated using the Option Assessment Framework reported in WebTAG Transport Appraisal Process, at the Appendix A. (The VISSIM analysis could be reported as an appendix and the results can be used to fill in the Option Assessment Framework tables).

- 3.15 At the end of Step 7, the better performing options to take forward for further appraisal should have been identified. Even if only one option from the sifting process (Step 6) has been selected, the Option Assessment Framework will be still to be produced for the option.
- 3.16 Given the complexity of the whole process, for a better comprehension, we suggest following the WebTAG section 2.11 in the Transport Appraisal Process document, which summarises the content of the Option Assessment Report.
- 3.17 As a consequence of what has been reported above, the content of the document which is not coherent with what advised should be modified or deleted.
- 3.18 In conclusion, we believe that, albeit in a proportionate manner and enabling a lighter touch approach where appropriate, the process described in the WebTAG is still to be followed.

#### SECOND REVIEW

- 3.19 After receipt of the first review detailed above, all of the outstanding issues were addressed in a resubmission.
- 3.20 Therefore, it is now possible to recommend the Option Assessment Report.

## 4 Appraisal Specification Report - Review

4.1 The Appraisal Specification Report (ASR) has been submitted for assessment. The document appeared to be generally acceptable; however, some comments have been provided in the following paragraphs, which assess, paragraph by paragraph, the ASR against WebTAG guidance.

### FIRST REVIEW

4.2 Chapter 1 contains some minor errors listed as follow:

- Para 1.1.1. The paragraph 1.1.1 seems to be referring to the Option Appraisal Report so it needs to be corrected.
- Para 1.2.3. The Appraisal Specification Report should regard all the options taken forward after Step 7 (already mentioned in the OAR), and not only one scheme.
- Para 1.4.1. The Full Business Case does not belong to this stage but to Stage 2 (further appraisal).

4.3 Chapter 2 (Challenges and Issues). This chapter is not required. Most of the contents should be reported in the OAR, in Step 5.

### TRANSPORT MODELLING (AND MODEL DEVELOPMENT REPORT - APPENDIX B)

4.4 According to the notes we pointed out in the previous review, this work has been correctly updated with clarification regarding the model year reference, survey data, calibration and validation, and Logit model.

4.5 However, it is not clear whether an increase in private cars demand has been taken into consideration, given the derived cost decrease.

### ECONOMY

4.6 Regarding the Journey Time comparison, more details are needed regarding routes and the scenario used for the Journey Times and any further assumptions.

4.7 The assumptions regarding the adoption of the values 2.8 and 4 as peak hour factors for the AM and Inter-Peak respectively need to be reported, or at least a reference to the Model

Development Report paragraph where the assumptions have been reported, must be carried out.

- 4.8 Has work duration bias been taken into consideration?
- 4.9 It has been stated that wider impacts have not been considered in the BCR. Explanation regarding sub-impacts exclusion has to be provided.

#### ENVIRONMENT

- 4.10 It appears that MRT Noise and Vibration impacts (e.g. on residential areas) have not been taken into consideration; explanation regarding this exclusion has to be provided. It is not clear whether 'noise and vibration' sub-impact during construction was going to be assessed and how; explanation regarding these points is required.
- 4.11 In the paragraph regarding the Air Quality, since it is not clear what type of vehicle the MRT is, further consideration regarding polluting agents (PM10, NO2) and the relative comparison with the existing park-and-ride bus service is required.

#### SOCIAL AND DISTRIBUTIONAL IMPACTS

- 4.12 In the Journey Quality assessment, explanation regarding the method used to carry out the qualitative assessment has to be provided.
- 4.13 In the accidents sub-impact paragraph, the change of the layout, with the new bus lane, cannot be considered negligible under specific flow conditions. The new design must be assessed in terms of safety (possible new conflict points, lanes reduction/widening, etc.). Consideration, at least, regarding this point has to be provided. WebTAG guidance provides a specific table/spreadsheet to perform the assessment; we recommend the use of it.
- 4.14 In the paragraph regarding 'Security', explanation regarding the method used to carry out the qualitative assessment has to be provided.
- 4.15 In the paragraph regarding 'Access to Services', the impact on accessibility regarding services such as: Healthcare facilities, employment areas, etc. is going to be assessed as neutral; this has to be reported in the ASR.

4.16 In the paragraph regarding 'Affordability', explanation regarding the consideration stated is required. Also the invariability of ticket pricing should be reported here.

4.17 In the paragraph regarding 'Option Values', explanation regarding the method used to carry out the qualitative assessment has to be provided.

#### PUBLIC ACCOUNTS

4.18 Sections explaining the method used for 'Cost to broad transport Budget' and 'Indirect Tax Revenues' evaluation should be reported in the ASR.

#### OTHER NOTES

4.19 A brief general explanation regarding the reason why any distributional effects across different socio-economic groups (lower income, disabled, children, etc) are not to be taken into consideration (e.g. with regard to the sub-impacts 'community and other users', 'affordability' and 'option values') is required.

#### CONCLUSION FOLLOWING RESUBMISSION OF ASR

4.20 After receipt of the first review detailed above, all of the outstanding issues were addressed in a resubmission.

4.21 Therefore, it is now possible to recommend the Appraisal Specification Report.

## 5 Full Business Case - Review

- 5.1 The Full Business Case (FBC) has been submitted for assessment. The document has been correctly updated according to our previous notes (March 2015) and is generally acceptable; however, as for the review produced for the Appraisal specification Report, some comments are provided in the following paragraphs, which assess, paragraph by paragraph, the FBC against WebTAG guidance.

### FIRST REVIEW

#### STRATEGIC CASE

- 5.2 **Problem Identified and Drivers for Change.** The existing problems should be defined better and it is not clear what the scheme is exactly and what it would change.
- 5.3 **Choice of Scheme.** The assessment mentioned in this paragraph does not seem to have been conducted. Also possible risks associated to the scheme(s) should be identified.
- 5.4 **Objectives.** The objectives have been mentioned as related to the scheme, while they should refer only to the problems. The scheme represents one of the possible solutions to solve/mitigate the problems.
- 5.5 **Stakeholders.** At this stage, all these consultations should already have been accomplished.
- 5.6 **Options.** This paragraph should be modified according to the revised OAR.
- 5.7 In general, each discussed point should be first referred to a more general process (to sum up what has been found in the previous Strategic Outline Business Case, through the OAR) and then to the selected scheme as an updating; alternatively, an introduction with the state-of-the-art, mentioning how all the points have been taken forward, would be equivalent. As mentioned previously, the process of option generation, sifting and appraisal has not been properly conducted since stage 1 and that would affect also the Strategic Case in this Full Business Case.



## ECONOMIC CASE

- 5.8 **Introduction.** In this paragraph, the approach to assessing value for money should be outlined. The exclusion/inclusion of the assessment of possible aspects (weekend usage) should take place in the first stage (and mentioned in the ASST).
- 5.9 **Option Appraised.** It would not be correct to use another project as entirely substitutive of the stage 1 (see OAR); instead, as already mentioned above, it is possible to use the results/findings from previous works as evidence to support the SOBC phases of generating, sifting and assessment.
- 5.10 **Social and Distributional Impacts.** Explanations should be provided as mentioned in the ASR review.

## FINANCIAL CASE

- 5.11 **Base Cost Estimates.** The expected whole life costs should be reported (including operating, maintenance, etc.).

## COMMERCIAL CASE

- 5.12 No apparent problems with the commercial case.

## MANAGEMENT CASE

- 5.13 No apparent problems with the management case.

## APPRAISAL SUMMARY TABLE

- 5.14 With regard to 'Noise' impact, the quantitative assessment value in the Monetary column needs to be reported.
- 5.15 In the AST, the Greenhouse gases values in tonnes are missing. The column regarding the qualitative assessment should be coherent with the one regarding the quantitative assessment: it should not be confused with the 'Estimated Impact in OAR' in the ASST (the cell regarding

type of assessment that has not been carried out should be empty or classified as N/A). This has to be amended.

- 5.16 With regard to 'Reliability impact on Commuting and Other users', in 'Summary of key impact' field, it appears that 'business users' have been incorrectly identified as 'other users'.
- 5.17 Regarding Indirect Tax Revenues, it is not clear what £201,000 refers to.

#### OTHER TABLES

- 5.18 The Transport Economy Efficiency (TEE) table, The Analysis of Monetised Costs and Benefits (AMCB) table and The Public Accounts (PA) table have been correctly produced.

#### BUSINESS CASE CHECKLIST

- 5.19 The Business case Checklist has been updated according to our previous review. However, the options section in the Strategic Case should be amended according to what has been reported in this review.

#### SECOND REVIEW

- 5.20 After receipt of the first review detailed above, all of the outstanding issues were addressed in a resubmission except for one outstanding issue:
- i) The modal shift as predicted by the Logit model is based on Before Scheme highway costs and After Scheme public transport costs. This is inconsistent as both sets of costs for the choice model should be consistent After Scheme costs. This is likely to over-estimate the modal-shift due to the scheme and therefore over-estimate the scheme benefits, possibly to a material degree. It is required that this inconsistency is addressed to robustly assess the scheme benefits.
- 5.21 Therefore, it is not possible to fully recommend the Business Case as submitted; and it is considered that the Business Case will require updating in line with point i) above in order to be considered suitable for final submission. At this stage, a conditional approval subject to addressing the requirements raised in this document, and subject to the scheme still representing High VfM, is considered to be an appropriate way forward.

# APPENDIX A - Business Case Checklist

Project Number: A087383-15  
 Scheme: Reading MassRapidTransport  
 Submitted by: Reading City 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	Y		Options appraised	Y		Costs	Y		Output based specification	Y		Evidence of similar projects	Y	
Problem Identified	Y		Assumptions	Y		Budgets / Funding Cover	Y		Procurement Strategy	Y		Programme / Project dependencies	Y	
Impact of not changing	Y		Sensitivity and Risk Profile	Y		Accounting Implications	Y		Sourcing Options	Y		Governance	Y	
Drivers for change	Y		Appraisal Summary Table	Y					Payment Mechanisms	Y		Programme / Project Plan	Y	
Objectives	Y		Value for Money Statement	Y					Pricing Framework and charging mechanisms	Y		Assurances and approvals	Y	
Measures for success	Y								Risk allocation and transfer	Y		Communication & Stakeholders	Y	
Scope	Y								Contract length	Y		Project Reporting	Y	
Constraints	Y								Human resource issues	Y		Implementation of work streams	-	Not a requirement
Inter-dependencies	Y								Contract management	Y		Key Issues	Y	
Stakeholders	Y											Contract Management	Y	
Options	Y											Risk Management	Y	
												Benefits realisation	Y	
												Monitoring and evaluation	Y	
												Contingency	Y	
												Options	Y	