



Thames Valley Berkshire Local Economic Partnership

Independent Assessment Summary Report: Slough Mass Rapid Transit System

Business Case Independent Assessment

Report No. RT-A087383-01

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: Slough Mass Rapid Transport

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	
2	15.07.14	Updated / Issued	CS
3	16.07.14	Reissue	CS
4			



Contents

1	Executive Summary	1
2	Process.....	4
3	Submitted Information.....	5
4	Review	6
5	Summary and Recommendations	12

Appendices

Appendix A – Business Case Checklist

1 Executive Summary

- 1.1 This technical note provides an independent review of the Slough Mass Rapid Transport (SMaRT) business case submission to the Thames Valley Berkshire Local Enterprise Partnership.

SCHEME SUMMARY

- 1.2 The SMaRT project provides a range of infrastructure improvements along a 6.7km section of the A4 corridor within Slough, consisting of two sections which are understood to broadly align with the western and central routes which formed part of the previous submission to the BLTB.
- 1.3 The scheme consists of a range of measures including sections of bus priority, targeted junction improvements and the installation of MOVA control at a number of signal controlled junctions along the corridor.
- 1.4 The scheme proposals also include a number of assumptions with regards to future public transport services on the A4 corridor.

REVIEW FINDINGS

- 1.5 The review of the submitted business case identified the following:
- 1.5.1 The Business Case is detailed and comprehensive and addresses all of the main areas expected within a major scheme business case submission (checklist provided as Appendix A).
- 1.5.2 The predicted overall Benefit to Cost Ratio (BCR) of the scheme is 7.66, which represents very high Value for Money (VfM).
- 1.5.3 There are however two main factors which the review would suggest should be taken into account when considering the overall benefits of the scheme:
- i) The reliance of the scheme benefits upon the assumed replacement of the current shuttle bus services operated by businesses within the Slough Trading Estate with use of the current and planned public transport routes on the A4 corridor.

ii) The apparent reliance of the scheme benefits upon the provision of the new MRT bus route to reduce passenger waiting times.

- 1.6 The proportional impacts of the new MRT bus route on the overall value of the scheme is not clear within the business case. However, it appears likely that the benefits of the scheme would reduce by a reasonable degree without the delivery of this additional service. As such it is recommended that further certainty as to the provision and ongoing viability of this additional service is provided to demonstrate that the stated benefits of the overall scheme can be achieved. In particular the expected commerciality of this service needs confirmation in the event that the shuttle bus services continue to operate and users don't transfer to public transport.
- 1.7 Following the initial review of the business case, Slough Borough Council and their consultant team updated the business case to include a 'worst case' assessment in which the use of Shuttle Buses to access the Slough Trading Estate continues as at present and in which current bus routes are unaltered, allowing the benefits directly associated with the SMaRT scheme infrastructure to be isolated.
- 1.8 This option was detailed in the updated business case submission as 'Sensitivity Test 13', which was reported as providing a BCR of 4.28. Whilst less than the values predicted within the 'Core Scenario' included in the business case, this would class as a 'Very High' value for money scheme.
- 1.9 A further letter of support has also been received from First Bus Group (dated 14th July 2014) outlining their support for the scheme and an in-principle agreement with Slough Borough Council to improve service frequencies in response to improved journey times on the A4 corridor.
- 1.10 The main queries raised with regards to the submitted case have therefore been addressed, although the recommendation of this report would be that, as scenarios which include the transfer of trips from the existing private shuttle buses to public transport cannot be guaranteed as part of the scheme submitted for funding, these should not be considered as core scenarios.
- 1.11 As such, and in light of the recent letter of support from First Bus Group, 'Sensitivity Test 6' (which includes the MRT route but excludes the transfer of Shuttle Bus users) may represent a

more suitable 'Core Scenario', providing a BCR of 5.95, with the options including the transfer of Shuttle bus users to public transport being considered to represent areas of potential additional benefit.

- 1.12 It is also recommended that, due to the benefits of the scheme being identified on a network wide basis, additional information with regards to the benefits specifically related to the A4 corridor and to individual service route times on that corridor, would provide further clarity to the Business Case. This information may be necessary, for example, to demonstrate to First Group the journey time improvements expected, and therefore to trigger the additional investment in bus services discussed within the business case and the related letter of support.

2 Process

MEETINGS

- 2.1 An initial project inception meeting was held at the Atkins Euston Towers Offices on 24th April 2014 to introduce the scheme and to discuss the timescales and requirements for the full business case submission.
- 2.2 This was followed by a further meeting on the 2nd May 2014 to discuss the modelling options available to assess the scheme in more detail and specifically to confirm whether the use of Variable Demand Modelling would be merited in this case.

OPTION ASSESSMENT REPORT / APPRAISAL SPECIFICATION REPORT

- 2.3 Due to the scale and complexity of the scheme and the changes in the project since the initial submission to the BLTB, a formal Options Assessment Report was requested, which has been provided as Appendix F of the submitted business case.
- 2.4 Due to the majority of the scheme benefits being expected to be related to savings in journey times (for either drivers of public transport users) and the need to determine whether changes in highway journey times were material, an Appraisal Specification Report was requested outlining the proposed approach to modelling the impacts of the scheme.
- 2.5 This was received on 30th May 2014 and proposed the use of the Slough Multi-Modal Transport Model (SMMTM) framework, incorporating a Saturn Highway Assignment Model and an EMME public transport demand and assignment model.
- 2.6 Whilst the SMMTM also included a DIADEM model, allowing for variable demand modelling, this was not proposed for use in the assessment of the SMaRT scheme, subject to the initial modelling using Saturn not showing material changes in highway journey times.

REVIEW

- 2.7 Following the review of the Appraisal Specification Report a draft of the full business case was submitted for review on the 2nd July 2014, with the information provided (including all appendices) 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 Slough Borough Council and their consultant team:

- Slough Mass Rapid Transport (SMaRT) Business Case draft dated 16.06.2014 / Updated 14.07.14
- Appendix A – BLTB Application Forms
- Appendix B – Scheme Drawings
- Appendix C – Bus Service Specification
- Appendix D – Letters of Support (First Buses, Heathrow Airport, Slough Placeshaping Directorate)
- Appendix E – Slough Bus Map
- Appendix F – Optioneering Report
- Appendix G – Modelling Report
- Appendix H – Appraisal Specification Report
- Appendix I – Environmental Scoping Report
- Appendix J – Distributional Impact Report
- Appendix K – QRA and Risk Register
- Appendix L – Programme
- Appendix M – COBALT assessment technical note

4 Review

OPTIONS ASSESSMENT

- 4.1 Appendix F of the submitted business case provides a summary of the option assessment process undertaken covering strategic option sifting followed by a review of design options related to the preferred strategic approach.
- 4.2 The scheme proposed for current funding represents the strategic approach considered to be the most deliverable of the main options, with the main alternatives being either rail based or using sections of guided busway.
- 4.3 The preferred option is understood to consist of a combination of two of the strategic options reviewed, predominantly with improvements to the A4 corridor, but supplemented with the use of existing service roads to provide for eastbound buses on the western section of the route.
- 4.4 The options assessment does not fully assess each of the potential options against the 5 cases, but provides a qualitative assessment based upon the main objectives identified for the Slough MRT project. Whilst supporting quantitative information is not provided, it is considered that the approach followed is proportional (taking into account the resources required to assess rail based options) and the rationale for the selection of the current preferred option is clear within the Options Assessment Report.

APPROACH TO MODELLING

- 4.5 The approach to modelling the impacts of the Slough MRT scheme was discussed at the Project Inception meeting (held at Euston Towers on 24th April 2014) and subsequently at a modelling specific meeting (held at WYG Leicester offices on 2nd May 2014).
- 4.6 The main impacts of the scheme have been assessed using the Slough Multi Modal Transport Model, which uses Saturn for highway assignment and EMME for public transport assignment.
- 4.7 The main initial discussion held with regards to modelling was to identify whether the scheme was reasonably expected to require variable demand modelling to be WebTAG compliant.

- 4.8 Following a review of the modelling report submitted as Appendix G of the Business Case the changes to highway journey times reported do not appear material, as such it is agreed that, whilst desirable, variable demand modelling is not required in this case.
- 4.9 In addition to the assessment of overall scheme benefits using TUBA, the modelling included a separate review of the impacts of users of existing shuttle bus services running to the Slough Trading Estate transferring to existing or new public transport routes on the A4 corridor.
- 4.10 Whilst the additional benefits of this transfer appear significant, it is not considered robust for this to form the 'core scenario' against which the benefits of the scheme are assessed, as the transfer of patronage cannot be guaranteed and the business case submission does not include any letters of support from businesses within the Slough Trading Estate to suggest that this transfer will take place. As such it is considered that the sensitivity tests which exclude this transfer would represent a more robust scenario against which to calculate the benefits of the SMaRT project. The longer term commercial viability of this option has also not been fully addressed, with the submitted information suggesting that the enhanced MRT service may be reliant upon the transfer of shuttle bus patronage onto public transport.
- 4.11 Following the initial review of the business case, Slough Borough Council and their consultant team updated the business case to include a 'worst case' assessment in which the use of Shuttle Buses to access the Slough Trading Estate continues as at present and in which current bus routes are unaltered, allowing the benefits directly associated with the SMaRT scheme infrastructure to be isolated.
- 4.12 This option was detailed in the updated business case submission as 'Sensitivity Test 13', which was reported as providing a BCR of 4.28. Whilst less than the values predicted within the 'Core Scenario' included in the business case, this would class as a 'Very High' value for money scheme.
- 4.13 A further letter of support has also been received from First Bus Group (dated 14th July 2014) outlining their support for the scheme and a in-principle agreement with Slough Borough Council to improve service frequencies in response to improved journey times on the A4 corridor.
- 4.14 Based upon the assumption that First Group deliver the service frequencies discussed in the Business Case, Scenario 6 may therefore provide a suitable alternative 'Core Scenario', (which

includes the new MRT service, but excludes the transfer of Shuttle Bus users), providing a BCR value of 5.95, (classed as a 'Very High' value for money scheme).

4.15 The review of the submitted modelling information also identified the following more detailed points:

- There are areas where the Saturn Model validates poorly on the A4 corridor, including journey times for the eastern A4 (westbound) and modelled link flow comparisons in the AM and PM periods.
- The proposed MRT service is expected to have costs of £670,000 per annum to operate (i.e. just over £40 million over 60 years undiscounted) and may be reliant upon the ceasing of existing shuttle bus services to become commercially viable.
- It is noted that services 75 and 76 experience increases in journey times between 2009 and the 2015DM modelling, as such there may be a need for additional buses to maintain service frequencies and headway.
- As model results are provided on a network wide basis, the specific impacts on the A4 corridor cannot be fully isolated (particularly for bus route journey times).

BUSINESS CASE

Format and Content

4.16 The submitted business case is comprehensive and covers each of the main categories expected for a scheme of this scale. A business case checklist is provided as Appendix A.

4.17 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.

Value for Money

4.18 The Slough MRT Business Case details a Benefit to Cost Ratio (BCR) for the SMaRT project of 7.66, which represents a very high Value for Money (VfM) scheme.

4.19 However, this BCR has been considered in the light of two main influencing factors, detailed below.

- 4.20 As detailed in the previous section of this note, it is considered that sensitivity test 6, which assumes the continuation of the current shuttle bus services to and from the Slough Trading Estate should form the basis of the 'core scenario' in the appraisal of the economic benefits related to the Slough MRT scheme, due to the lack of certainty that the transfer of trips from the shuttle bus services to the newly proposed routes will take place.
- 4.21 Sensitivity test 6 is predicted to result in a lower overall BCR value for the scheme of 5.95, although this would still class as 'Very High' in terms of expected Value for Money.
- 4.22 The second factor, the extent of which is not fully clear from a review of the submitted business case, is the degree to which the provision of the additional MRT bus service, understood to be required to increase service frequencies on the A4 corridor to every 10 minutes influences the overall BCR of the total scheme.
- 4.23 From a review of the information within the modelling report submitted as Appendix G, tables 8.3 and 8.4 appear to show the improvement in waiting time as being larger in the AM and PM periods than the savings in In-Vehicle time. This would suggest that a reasonable proportion of the overall reported public transport related benefits are due to the increase in service frequency resulting from the additional MRT service.
- 4.24 As detailed previously, First Group have provided a letter of support for the scheme, outlining an in-principle agreement with Slough Borough Council to improve service frequencies in response to improved route journey times. In the event of this improvement in frequencies not being delivered then 'Sensitivity Test 13' provides the worst case scenario in which only infrastructure improvements are realised, resulting in a predicted BCR of 4.28, (which would class as a 'Very High' value for money scheme).

Appraisal Summary

- 4.25 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 SMaRT 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	Large beneficial	Agreed	
	Reliability impact on Business users		Agreed	based upon a 19% reduction in journey time variability
	Regeneration	Slight beneficial	Agreed	
	Wider Impacts	Slight beneficial	Agreed	
Environmental	Noise	neutral	Agreed	
	Air Quality	neutral	Agreed	
	Greenhouse gases	Slight beneficial	Agreed	Within Economic Impact Section of Report
	Landscape	neutral	Agreed	
	Townscape	neutral	Agreed	
	Historic Environment	neutral	Agreed	
	Biodiversity	slight to moderate adverse	Agreed	
Water Environment	neutral to slight adverse	Agreed		
Social	Commuting and Other users	Large beneficial	Further information required	Shuttle bus users cannot be guaranteed to transfer to new services, waiting time benefits are also due to new MRT service being introduced. Requires further clarification to be confirmed level of benefit.
	Reliability impact on Commuting and Other users	Slight beneficial	Agreed	Based upon 19% reduction in journey time reliability
	Physical activity	Neutral	Agreed	
	Journey quality	Neutral	Agreed	
	Accidents	Moderate beneficial	Agreed	Based upon COBALT assessment
	Security	neutral	Agreed	
	Access to services	Slight benefit	Agreed	
	Affordability	Slight benefit	Agreed	
	Severance	Neutral	Agreed	
Option and non-use values	Neutral	Agreed		
Public Accounts	Cost to Broad Transport Budget	Large adverse	Agreed	
	Indirect Tax Revenues	Moderate adverse	Agreed	

Risks

- 4.26 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.
- 4.27 It is however noted that the western section of the route is reliant upon the successful compulsory purchase of the parcels of land identified on the scheme plans provided as Appendix B of the business case.
- 4.28 Whilst the potential risks associated with delays in the CPO process have been identified within the risk register, there is an overall risk that the CPO could be challenged and not permitted. As such further sensitivity tests were requested, which excludes the final section of the western route reliant upon the CPO.
- 4.29 These sensitivity tests were modelled and reported in the updated business case as 'Sensitivity Tests 14 and 15', which show a decrease in scheme PVB (Present Value Benefits) from the comparative scenarios, although this is offset by a decrease in scheme PVC (Present Value Costs), resulting in comparatively higher BCR values. It is however appreciated that the loss of these sections may pose further design challenges and reduce the overall cohesiveness of the bus priority routes proposed.

5 Summary and Recommendations

- 5.1 Based upon the review undertaken and the subsequent additional information and further sensitivity tests provided it is considered that the business case submitted could be expected to provide 'Very High' value for money.
- 5.2 The business case is considered to comprehensive, covers all of the expected areas for a Major Scheme Business Case of this type and scale and can therefore be recommended for approval.
- 5.3 It is however also recommended that:
- 5.4 Decision making on the value for money of the scheme should be on the basis of scenarios which exclude the transfer of Shuttle Bus passengers to public transport, this would result in a predicted BCR value of 4.28 (if also assuming no new bus services on the A4 corridor), or 5.95 (if assuming First Group increase frequencies to 10 minutes).
- 5.5 Further information with regards to the specific benefits achieved on the A4 corridor and to specific bus route journey times would add clarity to the business case and assist in demonstrating specific benefits to important stakeholders such as First Group.



Appendix A – Business Case Checklist

Project Number: A087383-01
 Scheme: SMaRT
 Submitted by: Slough 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	Y		Options appraised	Y		Costs	Y	Includes a QRA	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	N		Sourcing Options	Y		Governance	Y	
Drivers for change	Y		Appraisal Summary Table	Y	Provided as Appendix H of submission				Payment Mechanisms	Y		Programme / Project Plan	Y	Programme provided as Appendix L
Objectives	Y	Checked against monitoring	Value for Money Statement	Y					Pricing Framework and charging mechanisms	Y		Assurances and approvals	Y	
Measures for success	Y	Checked against monitoring							Risk allocation and transfer	Y		Communication & Stakeholders	Y	
Scope	Y								Contract length	Y		Project Reporting	Y	
Constraints	Y								Human resource issues	N		Implementation	Y	
Inter-dependencies	Y								Contract management	Y		Key Issues	Y	
Stakeholders	Y	Key Stakeholders have been involved and some letters of support provided, but the First Letter does not refer to funding the MRT service										Contract Management	Y	
Options	Y											Risk Management	Y	
												Benefits realisation	Y	
												Monitoring and evaluation	Y	
												Contingency	N	
												Options	N	