



Thames Valley Berkshire Local Enterprise Partnership

Independent Assessment Summary Report: East Reading Mass Rapid Transit Phases 1 & 2

Business Case Independent Assessment

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Appendices

Appendix A – Business Case Checklist

1 Executive Summary

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

SCHEME SUMMARY

- 1.2 The East Reading Mass Rapid Transit (MRT) scheme is a segregated fast track public transport, pedestrian and cycle route that is intended to support enhanced accessibility and continued sustainable growth in Reading, Wokingham Borough and the wider area. The MRT route is proposed to link the A3290 at Thames Valley Park, from the proposed new Park & Ride facility, to Napier Road, Reading town centre and the railway station. The proposed MRT is a new link that runs parallel to the railway line, between the railway and the river Thames.
- 1.3 The new bus link incorporates a new bridge over the mouth of the River Kennet as it discharges into the River Thames.
- 1.4 The purpose of the scheme is to improve the attractiveness of travelling more sustainably, therefore reducing private car trips, easing forecast congestion and air quality along the existing highway network, particularly on the A4 corridor.
- 1.5 This eastern section will form part of a longer term MRT network for the Thames Valley or operate as a standalone MRT route.

REVIEW FINDINGS

- 1.6 The Value for Money statement states that the initial BCR is 1.54 and the adjusted BCR is 1.81 which would put the scheme in the Medium value for money category. The scheme has been lifted into the **High Value for Money** category using the Net Social Value of identified dependent housing.
- 1.7 It is therefore possible to fully recommend the business case for the East Reading Mass Rapid Transit scheme.

2 Submitted Information

2.1 The first Business Case independent assessment of this scheme was carried out in February 2017 based upon the following reports and appendices submitted by Reading Borough Council and their consultant team (Peter Brett Associates):

- East Reading MRT - Full Business Case v1 0.pdf;
- East Reading MRT Phase 1 and 2 - Option Appraisal Report_131016.pdf;
- East Reading Mass Rapid Transit - Economic Assessment Report v1 0.pdf;
- 01_East Reading MRT Scheme TEE.pdf;
- 01_East Reading MRT Scheme TEE_Rev1.pdf;
- 02_East Reading MRT Scheme Public Accounts.pdf;
- 02_East Reading MRT Scheme Public Accounts_Rev1.pdf;
- 03_East Reading MRT Scheme AMCB.pdf;
- 03_East Reading MRT Scheme AMCB_Unadjusted_Rev1.pdf;
- 04_East Reading MRT Scheme AMCB_Adjusted_Rev1.pdf
- East Reading MRT Scheme AST - v1 0.pdf;
- MRT East Risk Register.xlsx;
- 28791-001-003_A.pdf;
- 28791-001-004_A.pdf;
- 28791-5506 Reading Transport Model - Data Report v1 0.pdf;
- 28791-5506 Reading Transport Model - LMVR v1 0.pdf;
- 28791-5506 Reading Transport Model - LMVR v1 0.docx;

- 28791-5506 Reading Transport Model - MFR v1 0.pdf;
- 28791-5513 ERMRT Demand Modelling Report v0 7.pdf

2.2 The second business case independent assessment of this scheme was carried out in July 2017. An updated business case and further documents were submitted in June 2017 by Reading Borough Council and their consultant team (Peter Brett Associates):

- East Reading MRT - Full Business Case v2 0.pdf;
- Review of WYG ERMRT Business Case_Summary of Responses_v1.xlsx;
- ERMRT_TAG Worksheet_Water 170608_v1_Issued.pdf;
- Appendices to Responses.zip

2.3 Following the second review an updated business case and further documents were submitted in October 2017. This Business Case independent assessment is based on these documents, submitted by Reading Borough Council and their consultant team (Peter Brett Associates):

- East Reading MRT - Full Business Case v5c.pdf;
- 28791-5513 ERMRT Demand Modelling Report v2 0.pdf;
- East Reading Mass Rapid Transit - Economic Assessment Report v5 0.pdf;
- ERMRT_Responses_to_WYG_Comments_received_18October2017_v1 0.pdf;
- East MRT Environmental Statement - Final.pdf;
- Cycle Benefit Calculations.xlsx.

3 Option Assessment Report

- 3.1 The OAR is well written and fulfils the requirements. The option descriptions are sufficiently detailed to understand each option.
- 3.2 The Options Assessment Report is acceptable.

4 Appraisal Specification Report

- 4.1 The Appraisal Specification Report (OAR) has been previously submitted for assessment and reviewed by WYG [ref: WYG_East_Reading_MRT-ASR_Review_(2016-06-29)].
- 4.2 On the whole the methodology for assessing the scheme, as set out in the ASR, is sound. Some details and requirements are missing from the ASR, particularly details of the scheme itself. Some, but not all, of these requirements have since been supplied in the business case.
- 4.3 An updated ASR will not be required.

5 Full Business Case - Review

The Business Case Document

- 5.1 The Business Case Submission is reasonably well set out, detailed and comprehensive. The scheme has an adjusted BCR of 1.81. Further indicative monetised benefits are used to inform the value for money statement.
- 5.2 Details of the scheme, in the form of scheme drawings, have been supplied.
- 5.3 Scheme capital costs are given in the PA table as £27.6m in 2010 prices and discounted values. Developer contributions of £4.9m bring the capital cost to government down to £22.7m. Maintenance costs are given as £1.8m, giving a PVC of £24.5m.
- 5.4 The scheme appraisal period is 60 years.
- 5.5 Maintenance and renewal costs are included in the assessment.
- 5.6 Benefits amount to £44.2m of which around 55% accrues to new and existing bus passengers.
- 5.7 Three scenarios have been assessed: the Core scenario (Scenario 1) and two alternative scenarios (2 and 3). The scenarios are:
- Scenario 1 – The Main Scenario (Core);
 - Scenario 2 – Low demand scenario (10% lower demand).
 - Scenario 3 – 50% CIL (50% lower developer contribution).
- 5.8 The above scenarios are not in the business case document, being instead presented in the Economic Assessment Report (EAR) of the previous submission.
- 5.9 The level of optimism bias is normally set to reflect the level of knowledge of risks to the project construction.
- 5.10 The scheme costs have now been supplied as a break-down, in particular the costs associated with the bridge structure are available separately. WebTAG levels of optimism bias are higher

for bridges and structures and the correct value should be applied according to the proportion of the cost of the project.

5.11 The business case states that a Quantified Risk Assessment (QRA) has been conducted. In order to qualify for a 'Stage 2' level of optimism bias (15% roads, 23% bridges) WebTAG Unit A1.2 requires that a fully documented robust QRA is carried out. Stakeholder workshops have been conducted in order to inform the QRA. Stakeholders included:

- Wokingham Borough Council;
- Scottish and Southern Electricity;
- Southern Gas Networks;
- Balfour Beatty;
- Reading Borough Council Highways;
- Reading and Wokingham Council Ecologists.

5.12 The "Review of WYG ERMRT Business Case_Summary of Responses_June2017_v3.xlsx" document states that the following stakeholders have or will be involved:

- Network Rail;
- Environment Agency;

5.13 A 'Stage 2' level of optimism bias (15% roads, 23% bridges) is applicable here and this is what has been used for the business case.

5.14 The scheme uses funding partially from the private sector in the form of developer contributions via a Community Infrastructure Levy (CIL). The funding from CIL is not secure and it is stated that Reading Borough Council will make up any shortfall. This means the scheme is not reliant on developer funding but it does mean the costs to the public sector could rise. A scenario with a pessimistic CIL contribution (50%) has been presented.

5.15 The Interdependencies section identifies that the Value for Money (VfM) relies on the Thames Valley Park Park and Ride (TVP P&R) being operational.

- 5.16 It is clear which bus services will divert to use the scheme. These have been provided in the form of plans of routes and full descriptions of the affected services.
- 5.17 Further comments on the business case sections are found in **Appendix A**.

The Modelling

- 5.18 Link flow validation on London Rd is good in the AM, less than perfect in IP and PM;
- 5.19 The journey time route of interest is Route 9. The AM inbound modelled time is low, IP is OK, PM is OK.
- 5.20 Whilst not ideal, the issues with the model validation are not sufficient to call into question the overall benefits of the scheme. However, since less than perfect validation is on the key A4 corridor it must be borne in mind that the estimates of the benefits will be subject to greater error than if the model were well validated in this location.
- 5.21 A narrative explaining why the results of the model should be relied upon given the less than ideal model validation along the A4 London Road corridor has been given in the business case document:

A key issue in validating the Reading Transport Model (RTM) which is a key component of the modelling evidence base, is the variation in day to day peak traffic flows in Reading and trying to best model these. The model should be viewed in the context of these day to day variations. These issues were documented in the LMVR Section 7.7. It can be considered that the relatively lower journey times in the model validation implies network conditions are understated and hence the switch to public transport is likely to be on the conservative side. The modelling is therefore assessing a worse and hence more conservative scenario. It also has to be noted that the additional actual number of trips as a result of the ERMRT is relatively small and this would not be affected significantly by a much improved base model validation.

- 5.22 The above is a reasonable explanation of why the results of the model should be relied upon given the less than ideal model validation along the A4 London Road corridor. The model is considered a sufficiently sound basis for appraising the scheme.

The Economic Assessment Report

- 5.23 The AM and PM peak annualisation factors would normally be 253 if only the peak hour has been modelled. The TUBA guidance has the proper methods for deriving benefits from the peak shoulders and have been followed correctly.

5.24 In the updated business case the TUBA method of modifying the matrices to estimate the peak shoulder benefits has been applied. The peak-hour demand has been factored down to the peak shoulders using ATC data. The cost matrices have also been factored down by the same factor as the demand matrices. It has been clearly stated that this relies on the assumption that the relationship between trip numbers and costs is linear.

5.25 Benefits broken down by peak period have been presented.

5.26 Recently issued DfT guidance on value for money has three levels of monetised benefits. These are known as 'Established', 'Evolving' and 'Indicative' monetised impacts.

5.27 The calculated 'Established' impacts are:

- Highway (TUBA) benefits of £7.89m;
- Public Transport (TUBA) benefits of £26.53m;
- Cycle benefits of £1.99m;
- Greenhouse Gas benefits of £0.47m;
- Accident (COBALT) benefits of £0.72m;

5.28 The calculated 'Evolving' impacts are:

- Bus journey time reliability benefits of £6.16m;
- Wider Impact 2 benefits of £0.46m.

5.29 Together the above benefits give an 'adjusted BCR' of 1.81 and a Medium value for money. The scheme would need an additional £4.7m of benefits in order to be lifted into the High value for money category. This is known as the Switching Value.

5.30 The calculated 'Indicative' impacts are:

- 168 new houses (Net Social Value) of £11.963m;

Four sensitivity tests around the number of houses have been conducted and all have a Net Social Value in excess of the switching value.

The scheme is thus lifted from the Medium to the High Value for Money category.

Conclusion

- 5.31 The Value for Money statement states that the initial BCR is 1.54 and the adjusted BCR is 1.81 which would put the scheme in the Medium value for money category. The scheme has been lifted into the **High Value for Money** category using the Net Social Value of identified dependent housing.
- 5.32 In conclusion, it is possible to **fully recommend** the business case for the East Reading Mass Rapid Transit.

Appendix A – Business Case Checklist

Project Number: A087383
 Scheme: East Reading MRT Phase 1-2
 Submitted by: Reading 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	Additional planning documents reviewed.	Introduction	Y	Information on varying day to day peak traffic flows added.	Costs	Y	Land costs added.	Output based specification	Y		Evidence of similar projects	Y	
			Options appraised	Y										
Problem Identified	Y	Improved rationale.	Assumptions	Y	Para 4.3.3 Updated: The latest version of WebTAG Databook has been used.	Budgets / Funding Cover	Y	Scheme funding profile updated. Include units in Table 5-3.	Procurement Strategy	Y		Programme / Project dependencies	Y	Updated. Text on TVP delay removed.
Impact of not changing	Y		Sensitivity and Risk Profile	N	No risk profile included.	Accounting Implications	Y		Sourcing Options	Y		Governance	Y	
Drivers for change	Y	Improved rationale.	Appraisal Summary Table	Y	Air quality benefits added. Non-monetised benefits reviewed. Scheme costs updated. Whole life costs added. Provide a more detailed breakdown of benefits in Table 4-1.	<p>Sections 4.4 to 4.6 include a summary of scheme costs and benefits, as well as the VfM statement. However, the report structure does not comply with the DfT Guidance.</p>			Payment Mechanisms	Y		Programme / Project Plan	Y	
Objectives	Y	Air quality objective added. Objectives v-vii are not clearly measurable.	Value for Money Statement	Y	Updated				Pricing Framework and charging mechanisms	Y		Assurances and approvals	Y	
Measures for success	Y	The targets have not been quantified. The key benefits in Para 1.1.11 do provide some quantification. Para 3.7.1 states there is at least one measure for success for each objective, yet only 4 of the objectives are covered in Table 3-1.							Risk allocation and transfer	Y		Communication & Stakeholders	Y	
Scope	Y	Information on bus services that will use the scheme added.							Contract length	Y		Project Reporting	Y	
Constraints	Y								Human resource issues	Y		Implementation	Y	
Inter-dependencies	Y								Contract management	Y		Key Issues	Y	
Stakeholders	Y	Information on planning application added.										Contract Management	Y	
Options	Y											Risk Management	Y	
												Benefits realisation	Y	
												Monitoring and evaluation	Y	
									Contingency	Y				
									Options	Y				