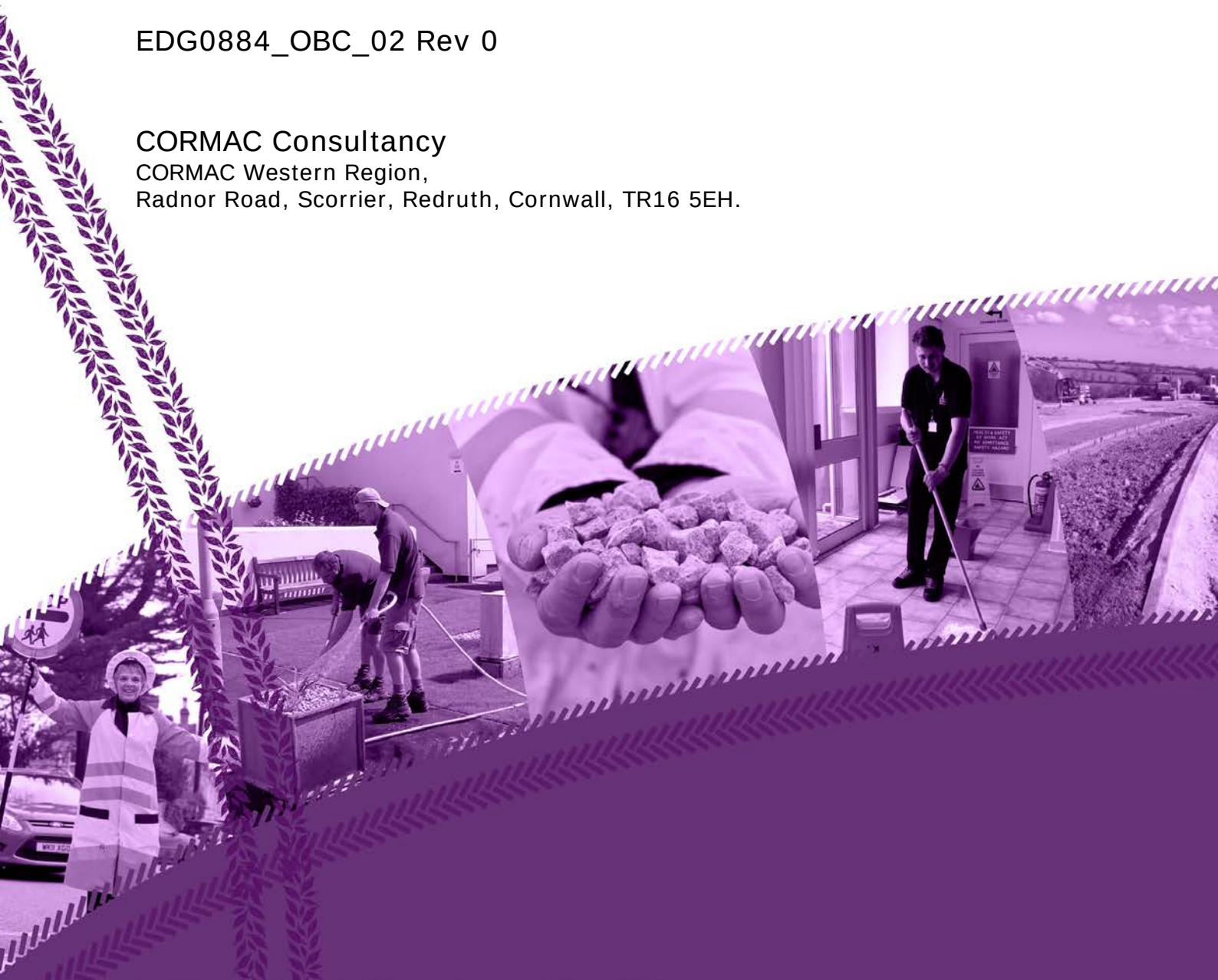
A3075 Cubert Crossroads

DRAFT Outline Business Case
Single Lane Dualling Option

EDG0884_OBC_02 Rev 0

CORMAC Consultancy
CORMAC Western Region,
Radnor Road, Scorrier, Redruth, Cornwall, TR16 5EH.



Issue & Revision Record						
Revision	Date	Originator	Checked	Authorised	Purpose of Issue	Nature of Change
0	15.03.17	DP	NH	AA	DRAFT	

Prepared by
Engineering Design Group

If you would like this report in another format, please contact

CORMAC Solutions Ltd
Head Office
Higher Trenant Road
Wadebridge
Cornwall
PL27 6TW

Tel: 01872 323 313
Email: customerrelations@cormacltd.co.uk
www.cormacltd.co.uk/

1 Introduction

1.1 Cormac Solution's Engineering Design Group was commissioned by Cornwall Council to produce an outline business case report for the proposed junction improvement on the A3075 at Cubert Crossroads.

1.2 The business case will be used by the Council to justify the need for the new junction and to attract external funding.

1.3 A 2D design for a single lane dualling option was produced and costed as part of the Options Appraisal Report (document reference EDG0884 Rev 01, November 2015). This information has been used for the production of the Outline Business Case.

1.4 A previous business case for the junction (document reference EDG0884_OBC_01, January 2017) was produced for two separate design options – an online roundabout, predominantly constructed within the public highway; and an offline roundabout, constructed within third part land.

1.5 The following report highlights the key issues arising from the Preliminary Business Case Assessment. WSP Parsons Brinckerhoff has undertaken an analytical study of traffic flows which have been used to support the Benefit-Cost Ratio (BCR) calculation for the scheme.

1.6 Two separate assessments of the scheme have been undertaken. These were to include and exclude the construction of a scheme on the A30 between Carland Cross and Chiverton Cross, which is named as a committed scheme in the governments Road Investment Strategy (2015 to 2020).

2 Report Structure

2.1 The preliminary design drawing for the scheme can be found in Appendix A, while the Preliminary Business Case Assessments can be found in Appendices B and C.

2.1.1 **Appendix A** contains a 2D general arrangement drawing of the single lane dualling layout at the location of the existing crossroads.

2.1.2 **Appendix B** contains a Preliminary Business Case Assessment for the junction excluding the impact of the dualling of the A30 between Carland Cross and Chiverton Cross.

2.1.3 **Appendix C** contains a Preliminary Business Case Assessment for the junction including the impact of the dualling of the A30 between Carland Cross and Chiverton Cross.

3 Summary of Business Case Assessments

3.1 The following table summarises and compares the results of the two business cases for the single lane dualling design option.

	Excluding A30 Scheme	Including A30 Scheme
Scheme Construction Cost	£3.5m	£3.5m
TUBA Benefits	-£2.349	£0.574m
TUBA Social Benefit-Cost Ratio (BCR)	-0.828	0.205
COBA-LT Benefits	£0.0435m	-£0.004m
COBA-LT Safety Benefit-Cost Ratio (BCR)	0.012	-0.0011
Combined Economic Assessment Cost	**-£2.3055m**	**£0.570m**
Combined Economic Assessment BCR	**-0.812**	**0.201**

Table 3.1 – Summary of Business Case Assessments

4 Key Issues Arising from the Assessments

4.1 From reviewing the business cases, the following key issues have been identified:-

4.1.1 Traffic modelling was undertaken from 2015 to 2030 in accordance with the Local Plan.

4.1.2 The traffic modelling has been undertaken using the neutral month AM and PM peak hour matrices, hence the appraisal does not include interpeak, off-peak or seasonal time periods. This therefore covers only 506 hours out of a total 8,760 per year, which does not fully reflect the off-peak dis-benefits which would reduce the BCRs further and complete the study in a similar way to that carried out for major schemes.

4.1.3 Assuming the A30 dualling scheme between Chiverton Cross and Carland Cross does not get built, the anticipated traffic flows on the A3075 will be higher when compared to a scenario where the A30 dualling scheme is built.

4.1.4 There are benefits associated with the scheme, but they are limited and mainly for vehicles coming out of the side roads since there is now a two stage procedure for vehicles making a right turn or straight across manoeuvre. The number of vehicles benefiting from this is relatively limited.

4.1.5 Single lane dualling introduces a new give way for vehicles turning right that is currently not there, also giving way to those turning right out of the side roads. With a busier mainline coupled with having to give way to vehicles turning right out of the side roads, the opportunities to make right turns are extremely limited, and more difficult than under the current junction arrangements.

4.1.6 The junction is ranked 146th in Cornwall on the 2016-2017 accident site listing. Current accident statistics do not present a compelling case for prioritising this junction over other sites within Cornwall.

5 Discussion

5.1 The future A30 Carland Cross to Chiverton Cross improvement has a significant impact on the BCR for the scheme, with 1.013 separating the 2 separate assessments of with and without the scheme being constructed.

5.2 If the A30 dualling scheme is not constructed, then flows on the A3075 are higher, making it more difficult for vehicles to turn right into the side roads.

5.3 The additional give way for right turning vehicles coupled with the busier mainline limits the opportunities to make right turns into the side roads, with the St Newlyn East arm worst affected.

5.4 This inability to right turn was reflected in the traffic modelling where the right turn lanes regularly became full, blocking back into the main line through lanes. This will have contributed to the negative BCR.

5.5 In order to keep the mainline traffic flowing, an additional length of central reservation stacking would be required to accommodate the number of vehicles wanting to turn right. However, this would increase the cost of the scheme, and given the location at the crest of the hill, may lead to forward visibility issues.

5.6 The additional length of central reservation may help to improve the BCR for the scheme, but not to the degree that it may attract external funding sources.

6 Conclusion

6.1 The provision of a single lane dualling at Cubert Crossroads does not provide a strategic case for the scheme as it does not unlock any significant levels of economic growth, with only limited contributions towards the Council's strategic transport aims.

6.2 The low and negative BCRs for the scheme, both with and without the A30 scheme represents poor value for money and unlikely to attract external funding.

6.3 In the future, it may be beneficial if the Economics case was re-run once the final A30 Carland Cross to Chiverton Cross modelling has been completed over the next couple of months. This is due to the fact that CC has requested changes to the model coverage, which will probably impact on this section of the road network. In addition the route of the road and the junction forms are still being assessed and WSP | PB has undertaken some refinement of the modelling in advance of the Development Consent Order submission.

Appendix A – Single Lane Dualling Design Drawing

Appendix B – Preliminary Business Case Assessment 1 (Excluding A30 Carland Cross to Chiverton Cross Scheme)

Appendix C – Preliminary Business Case Assessment 2

(Including A30 Carland Cross to Chiverton Cross Scheme)