

East West Rail Consortium Strategic Board 16th March 2021

Agenda Item 7: London Road Crossing, Bicester

Recommendation: It is recommended that the meeting:

- a) Note the outcomes of the Options Appraisal Report for London Road, Bicester as set out below.**
- b) Agree that the preferred options identified should inform further development of investment options as part of a place-based and multi-modal solution for Bicester that will also help enable the longer-term potential for East West Rail services, in particular supporting the planned Development Consent Order process for Connection Stage 3 over the next year.**

1. Introduction

- 1.1. An interim report on progress on the London Road Options Appraisal Report (OAR) was given to the East West Rail Consortium on 9th December 2020. This report gives an update on the final outcomes from this work, and the implications for East West Rail in helping to support delivery of the next stage.

2. Background

- 2.1. The OAR report was funded through the Consortium Work Programme, with the work undertaken by the Oxfordshire County Council (OCC) Innovation Team (iHub), in association with transport modelling undertaken by consultants WYG using the Bicester model.
- 2.2. The OAR work sets out and appraises options for interventions that will help enable continued access to and from Bicester Town centre as level crossing down-time increases in line with train service frequencies. In particular, it considers what measures should be prioritised for investment once train service frequencies increase above those already expected following opening the next stage of EWR between Bicester and Bletchley/ Milton Keynes (timetabled for December 2024), for example once the next stages of East West Rail onwards to Cambridge are delivered.
- 2.3. By developing the evidence base, the OAR helps to build a common understanding amongst partners of the longer-term transport access investment options needed in Bicester as the EWR project develops. This is seen as key to enabling the longer-term potential of East West Rail to be realised.

3. Methodology:

- 3.1. At the start of the project, a number of different project objectives were developed, taking into account current policy and strategy. They were as follows:
 - i) To facilitate expansion of rail services while maintaining connectivity across the town and promoting town centre vitality and accessibility
 - ii) To encourage the development of a high-quality, innovative and resilient integrated transport system that promotes active travel provision and supports healthy place-shaping
 - iii) To promote opportunities for pedestrians and cyclists in Bicester

- iv) To reduce carbon emissions from transport in Bicester and improve air quality in the town, particularly within the designated Air Quality Management Area
 - v) To improve connectivity between key employment and residential areas and their access to the strategically important transport networks, including rail services
 - vi) To encourage and facilitate the efficient operation of bus services in Bicester and the surrounding area
- 3.2. In addition, a number of different intervention options were defined. These were based on work undertaken to date related to potential options for continuing to allow transport accessibility in Bicester, once the London Road level crossing down-time increases. They are as follows:
- Option (do-something) 1: Delivery of the SE Link Road and Bicester Bypass improvements
 - Option (do-something) 2: Direct highway intervention at London Road (either a bridge or underpass)
 - Option (do-something) 3a and b: Delivery of a package of sustainable transport improvements, based on 2 of the CAT (Commitment to Active Travel) interventions scales (out of the 3 intervention scales outlined as possible), as proposed as part of the Bicester Local Cycling and Walking Infrastructure Plan (LCWIP). This plan was endorsed at Oxfordshire County Council Cabinet in September 2020.¹ These options are:
 - CAT C: development of a comprehensive cycle route network, and
 - CAT B: which includes (in addition to these measures in CAT C), a number of measures re-allocating road space to active modes of travel (which would also be complemented by softer support measures to promote cycling).
- 3.3. Both 3a and 3b forecast a scenario where travel demand in the Bicester urban area shifts towards walk/cycle trips. The mode split predicted in the Bicester LCWIP for each of these scenarios is shown in **Appendix 1**, and these targets are reflected in the transport modelling work undertaken.
- 3.4. The OAR work pulls together the assessment of these options, both against the objectives set for the project, but also using evidence from modelling work to assess their benefits/ disbenefits.

4. Outcomes of study work undertaken

a) Assessment of Options against objectives

- 4.1. To start, the options were assessed against the 6 objectives noted above, with each objective given a score of 1 to 5 as follows:
1. Significantly worsen conditions, 2. Slightly or moderately worsen conditions, 3. No impact on objective, 4. Slightly or moderately improve conditions, 5. Wholly or significantly achieve objective
- 4.2. The outcome of this scoring assessme and an explanation of this is given in **Appendix 2**, but in summary the proposed sustainable transport options (based on the Bicester LCWIP) generally score better overall against the objectives set, followed by the highway intervention options.

b) Assessment of options using the Bicester model.

- 4.3. Transport modelling for Options 1 to 3b was undertaken and compared against a theoretical 'do-nothing' option where the crossing is closed for part of the time (approx. 28 mins/ hour as per the current planned train service specification once EWR Phase 2 is in place) and a 'do-minimum' option, where it is assumed that the crossing effectively becomes unworkable and hence closed for general use (but that no interventions are taken forward). In all 'do something' options, it is

¹ Bicester LCWIP- as approved at the County Council Cabinet, Sep 2020:
[Agenda for Cabinet on Tuesday, 15 September 2020, 2.00 pm - Oxfordshire County Council](#)

assumed that the level crossing is fully closed to vehicles (though directly replaced with an alternative allowing all vehicles access in option 2, and with cycle/pedestrian connectivity provision in options 3). A table showing the impact of traffic flows on key routes is given in **Appendix 3**, but in summary the following impacts are shown:

- *'Do-minimum'- no intervention:* Increase in flows compared with the 'do-nothing' option (crossing only closed for part of time) on the existing A41 route, with flows also increasing on the Eastern Perimeter Road.
- *Option 1: Delivery of the SE Link Road and Bicester East Perimeter Road improvements:* With delivery of improved roads on the outskirts of Bicester, traffic decreases significantly on the existing A41 as traffic routes to the new SE Link Road, but traffic on other routes remains largely similar to the 'do-minimum' option. (excepting London Road, given assumed closure of the level crossing).
- *Option 2: Direct highway intervention at London Road:* Under this option, significant increases of traffic are seen on London Road, Launton Road and in Market Square compared to the 'do-minimum' option, with decreases on the by-pass at Charbridge Lane as traffic uses more central Bicester routes.
- *Option 3a: Development of a comprehensive cycle and walking network for Bicester:* Traffic flow is slightly lower on key routes than the do-minimum option, as people switch to using active travel modes within Bicester, but there is little impact on peripheral routes.
- *Option 3b: Development of cycle network, including certain road closures to re-allocate space to active travel modes:* Traffic flows are much lower in central Bicester Streets including through Market Square due to 'on-point' road traffic restrictions/modal filters and the further switch to active travel modes.

c) Assessment of options using the central government Early Assessment and Sifting Tool (EAST)

- 4.4. Each option was also appraised through use of an EAST assessment, against the strategic, economic, managerial, financial and commercial cases. The detail of this is given in **Appendix 4**, but in summary the following key points are noted;
- Overall, the sustainable transport options, 3a and 3b perform better against outcomes than the road build options (1 and 2). This is particularly the case against transport objectives in the strategic case, environmental and value for money objectives in the economic case, affordability/ cost in the financial case and flexibility in the commercial case. This scoring recognises that these options better fit with wider policy priorities, and from a practical perspective should be less costly and more easily delivered.
 - Although the road build options are expected to be higher cost and practically more difficult to deliver, they do still score relatively well against certain objectives such as economic growth. Overall, delivery of wider highway improvements (option 1) performs better than delivery of a direct highway intervention at London Road (option 2). This is particularly in the economic case, given links to enabling wider development, and likely greater environmental benefits (particularly noise/ air pollution).

5. Conclusions/ Next Steps

- 5.1. Within the OAR, each option has been considered separately for the purposes of assessment against objectives, transport modelling and the EAST assessment. Based on this assessment, Option 2, a direct highway intervention at London Road scores least well, and Option 3b, a package of significant interventions to promote sustainable transport performs best.
- 5.2. However, it is recognised that a package of transport investments will be needed to mitigate the severance issues that further rail services will cause along London Road. The package of measures will need to deliver a place-based solution that fits with the wider Bicester area transport and land-use policy that is now being

updated. For example, should a direct highway option on London Road not be progressed, a solution would still need to be found to enable pedestrians and cyclists to cross safely at this location to meet sustainable transport objectives, and there may need to be mitigation for the increase in vehicles along Charbridge Lane and Launton Road in order to access town centre car parks, the station and other locations.

- 5.3. It is also noted that the East West Rail company are now developing a Development Consent Order (DCO) which will set out the basis for delivery of the next stage of East West Rail, including any required mitigation in Bicester. It is therefore proposed that the options developed and assessed in this OAR study should inform the more detailed work needed over the next year, recognising that any proposals will need to fit with land-use considerations in terms of development of Bicester as a place.

James Gagg
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Appendix 1: CAT Levels for Bicester and forecast levels of transport trips by mode for each

Note: The London Road OAR only considers the intervention options proposed under options C and B. Option C includes development of a comprehensive cycle/ walk network, with option B in addition including re-allocation of some road space through targeted traffic restrictions. Option A (not assessed in the OAR) included full roll out of Low Traffic Neighbourhood principles to the Bicester urban area.

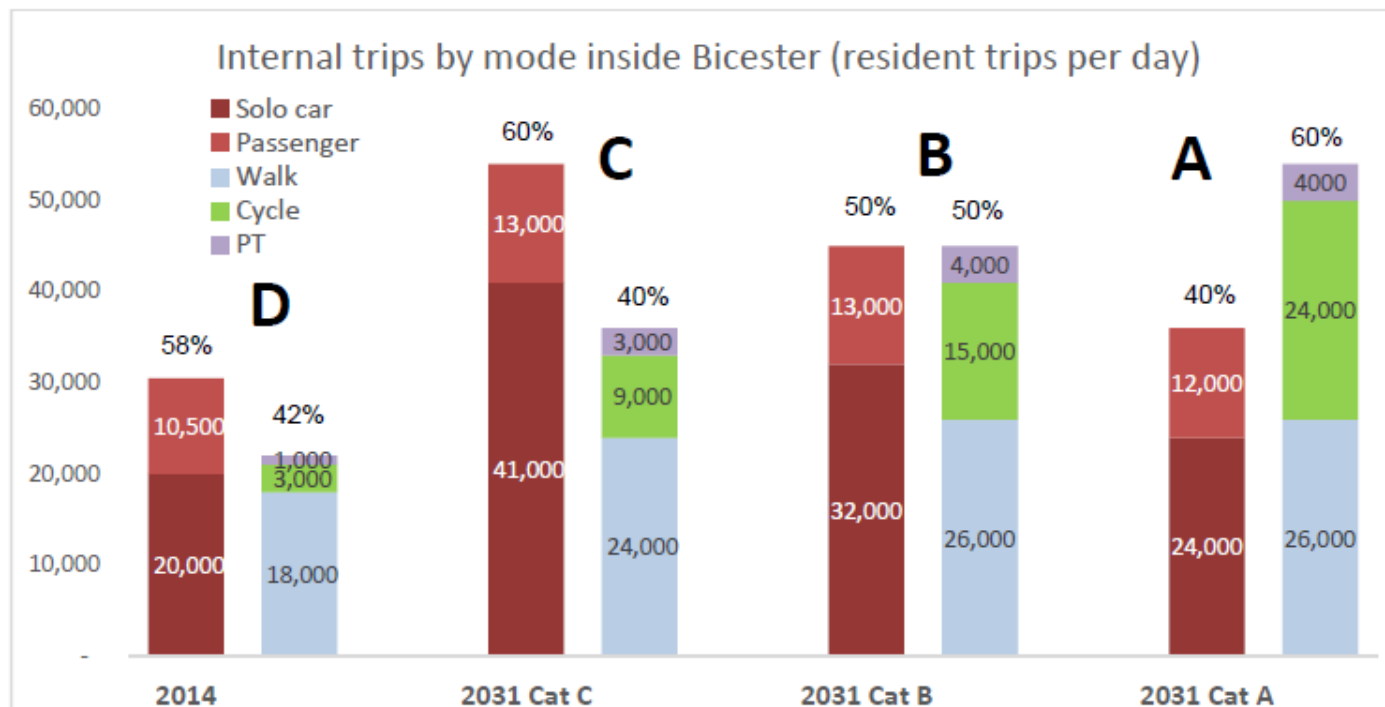


Figure 9 Current (D) and predicted (2031-5) number of daily trips by Bicester residents within Bicester only (i.e. excluding trips to/from outside Bicester) for different levels of Council commitment. The left-hand columns show car travel and the right-hand columns show sustainable travel (walking, cycling and bus use) with overall percentages of trips. Source: Baxter 2015 for total trip rates in 2031-5 and category C split.

Appendix 2: Assessment of options against objectives, including further explanation

	DS1	DS2	DS3 a	DS3 b
Objective i Rail service expansion facilitated & town centre accessibility & vitality promoted	4	4	4	5
Objective ii Integrated transport system supporting active travel & healthy place shaping	4	3	4	5
Objective iii Promote walking and cycling opportunities	3	3	4.5	5
Objective iv Reduce CO2 emissions and improve air quality	3	2	4	4.5
Objective v Improve inter-connectivity	4	4	4	4
Objective vi Facilitate efficient bus services	4	3	3	4
Total	22	19	23.5	27.5

Objective 1:

- DS1 – allows additional rail services, creates reduced flows in town centre increases vitality, but reduced connectivity for cars
- DS2 – improved connectivity for cars, but increased flows in town centre, reduces accessibility for other users and vitality
- DS3 a – reduced traffic into town, increased accessibility by sustainable transport, reduced connectivity for cars. Vitality increased – economic benefit from active travel for businesses due to increased footfall

- DS3 b – as above, but more so for increased vitality (examples of economic benefit elsewhere inc Dublin 100% increase in business in some shops from pedestrianisation), reduced delays in general around town

Objective 2:

- DS1 – increased resilience to network from new road, traffic attracted away from town centre supports active travel
- DS2 – resilience increased due to crossing replacement, but active travel discouraged through increased traffic in town
- DS3 a – active travel encouraged, and traffic levels reduced improving network resilience slightly
- DS3 b – as above, but more so

Objective 3:

- DS1 – marginally improved active travel opportunities from reduced traffic flows, but does not address severance for cyclists and walkers currently using London Road
- DS2 – level crossing removal improves active travel, but increased traffic in town reduces opportunities
- DS3 a – increased opportunities for active travel
- DS3 b – as above, but more so

Objective 4:

- DS1 – reduces traffic in most of town, but increases on King's End (AQMA)
- DS2 – opposite impact to DS1, marginally reduced CO2 emissions from more direct motorised journeys which is outweighed by increased traffic levels
- DS3 a – reduced traffic improves carbon emissions and air quality
- DS3 b – as above but more, and best scenario for AQMA

Objective 5:

- DS1 – slight benefits by taking north-south through traffic around town
- DS2 – more direct access to employment areas east of Launton Road
- DS3 a – interconnectivity by bicycle improved
- DS3 b – as above, but reduced interconnectivity by car (closures); may improve PT interconnectivity through increased reliability from reduced traffic

Objective 6:

- DS1 – removing traffic from town centre makes bus operations more attractive
- DS2 – little impact on services
- DS3 a – reduced traffic should make bus operations marginally more attractive in areas not affected by London Road closure, but services using London Road will need to re-route.
- DS3 b – as above but traffic levels are reduced to a greater level, so benefits are larger, esp. if road closures to cars increase reliability. Significantly reduced traffic also improves walking environment, so supports bus use

Appendix 3: Traffic model flows

2-way flows	12 hour flow					
	Road Name	KU	LRLC	DS1	D S2	DS3 a
London Road (between the Launton Road junction and level crossing)	6991	2937	2933	12551	2772	2598
London Road (south of level crossing)	4019	0	0	9645	0	0
A41 west of Graven Hill/London Rd	30699	32295	23908	30238	30632	30463
Charbridge Lane (at railway bridge)	21650	23379	23932	18993	21682	21202
Launton Road (just north of junction with London Road)	9053	7759	7656	12561	7479	2768
Launton Road (at railway bridge)	13050	12696	12422	15666	11517	10701
Launton Road (north of Churchill Road)	15952	17266	16959	13754	16134	14393
A41 (between Bicester Village and Vendee Drive)	38215	38543	29557	37584	37517	35566
Market Square (both sides combined)	9229	8221	8123	9830	7934	866
Kings End east of Queens Ave	5372	6237	6249	5037	6142	1764

Predicted 12-hour flows (pcus)

Figures in red denote the scenario which gives the highest flow on each road section, and figures in green show the lowest flow on each road section

KU = 'do nothing' scenario – level crossing closed 28 min per day

LRLC = 'do minimum' scenario – level crossing closed fully

DS1 = Improvements to South East Link Road and Bicester Bypass

DS2 = Direct replacement construction (under- or overpass)

DS3 a = CAT C sustainable package, comprehensive cycle network

DS3 b = CAT B sustainable package, cycle network, road closures (including in the town centre and Buckingham Road central corridor) and additional supportive policy measures

- DS2 has largest number of 'worst' flows, while DS3 b has highest number of 'best' flows
- DS3 b – flows on roads around Bicester largely unaffected, as modal shift is for internal-Bicester trips. Most significant benefit found on Market Square (flows only 10% of KU / LRLC)
- Kings Road AQMA best scenario DS3 b; worst scenario DS1
- NB roads with capacity problems under do nothing scenario:
 - A41 west of Graven Hill/London Road
 - Launton Road (at railway bridge)
 - Launton Road (north of Churchill Road)
 - A41 (between Bicester village and Vendee Drive)
 - Market Square (both sides combined)
- DS3 b addresses capacity problems at:
 - Market Square
- DS3 b reduces capacity problems at:
 - Launton Road (at Railway bridge)
 - Launton Road (north of Churchill Road)
 - A41 (between Bicester and Vendee Drive)
- DS1 addresses capacity problems:
 - Westbound (but not Eastbound) on A41 west of Graven Hill/London Road
 - A41 (between Bicester village and Vendee Drive)

Appendix 4: Results of the EAST analysis

Scenario	Strategic				Economic						Managerial				Financial			Commercial	Total	
	Scale of impact	Transport	Other	Consensus on outcomes	Economic	Carbon	Socio-distributional	Local	Well-being	Value for Money *	Timetable**	Acceptability	Feasibility	Quality of Evidence	Affordability	Capital Cost	Revenue Cost	Cost Risk	Flexibility	
DS1	2	3	3	4	5	3	4	2	4	3	1	3	4	3	3	2	5	1	2	57
DS2	3	2	2	3	4	2	4	1	3	1	2	3	2	3	2	2	5	1	3	48
DS3a	2	4	4	3	4	4	4	4	4	5	2	4	4	3	4	3	4	2	5	69
DS3b	4	4	5	3	4	5	4	5	4	5	2	3	4	3	4	2.5	4	2	5	72.5

Results of EAST assessment (higher score = good)

* - for Value for Money the score is inverted from EAST (1=5, 2=4, 3=3)

** - for timetable, the score given = (7- EAST score)

*** - for cost, the score given = ((10- EAST score)/2)