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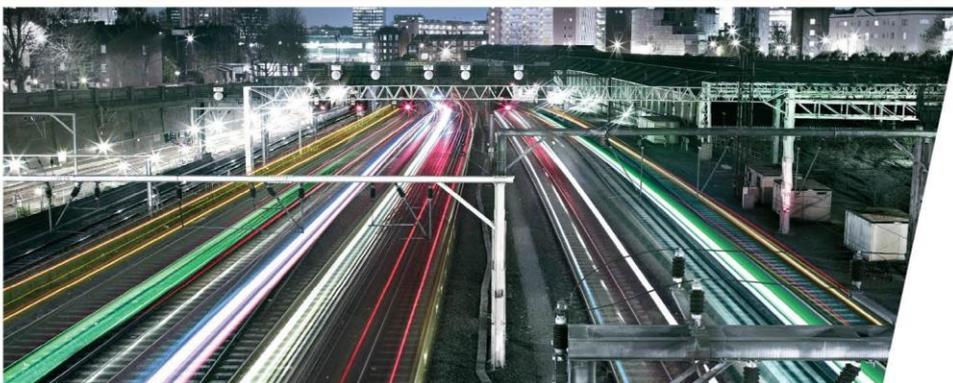
East West Rail Phase 2

Development of Identified Options for London Road Level Crossing, Bicester - Key Findings

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Oxfordshire County Council

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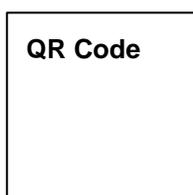
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Document History



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Key Findings

Oxfordshire County Council (OCC) in partnership with Network Rail, have commissioned a Feasibility Study of road crossing options to replace the London Road Level Crossing in Bicester. An early sift of a wider number of alternative solutions was undertaken through technical studies undertaken by Atkins and Parsons Brinckerhoff between 2013 and 2015. This current work assesses the remaining options – two potential underpass options.

The options present a worst case scenario as they are in accordance with Network Rail standards with no derogations, for instance in terms of the deck headroom and impact resistance of beams. Opportunities to reduce costs and impact on properties could be investigated if the project is to be progressed, including single directional flow options.

In addition, an overbridge option has been considered. This has not yet been developed to the same level of detail as the Underpass options, but is anticipated to have lower construction costs and improved buildability in comparison.

Underpass Options

The underpass alignment options are based on DMRB Standards for a 60kph design speed for consistent analysis. However, potential departures from standards have been agreed in principle with Oxfordshire County Council (OCC), which will reduce the tie-in positions, verge widths, footpath and cycleway widths and visibility splays for all options at a later stage of design. All underpass options have highway alignments which are compliant with standards. This option study has looked at centreline vertical design only with channel levels and more detailed junction analysis required at the next design stage to confirm the exact position of highway tie in positions.

The highway underpass solutions require a large drainage attenuation tank in the immediate vicinity of the underpass to control flows from the highway into the nearest sewer outfall. Pumps will be required to raise the water from the attenuation tank to a gravity-fed sewer outfall. The exact location of the outfall has not been determined due to the existing sewer network requiring diversion if an underpass solution is chosen.

London Road Level Crossing is a major thoroughfare for utility apparatus due to it being one of the few corridors where utilities can cross the railway in the local urbanised area. All options will result in significant conflicts with electric, gas, water, sewer and telecoms apparatus. It is recommended that applications are made to the utilities to provide further information on the potential cost implications in advance of detailed design.

Five structural options were considered, and two were taken forward for development. These are both steel 'half-through' structures, adapted from Network Rail standard details, which aid installation during constrained railway possession windows.

The presence of shallow bedrock will impact on excavation rates for the undertrack crossing and approach roads. Within the bedrock, which has the potential to contain open joints, groundwater is expected to be under sub-artesian conditions such that water inflows into excavations are likely to be significant. Consequently, normal dewatering control methods will be problematic and pre-excavation ground treatment is likely to be required. This could take the form of permeation grouting to infill joints within the bed rock, or temporary ground freezing, although the impact of possible ground heave on adjacent properties should be considered.

Excavation work will need to be sequenced to ensure stability of the overlying soft ground in the temporary condition prior to commencing rock excavation beneath. A form of primary support is recommended as rock excavation progresses, which may comprise the use of sprayed concrete, with additional support measures if required. The method of support would be determined following detailed ground investigation and may include open-cut batters or sheet piles.

A detailed ground investigation is recommended so that a detailed ground model can be developed for the selected option to allow suitable management of ground risks, ensuring that ground movement impacts on adjacent infrastructure are minimised and the design solutions can be optimised.

Planning Application and Required Consents

All options would require an application for full planning permission, including consent for the demolition of buildings. This would have to be accompanied by an application for Listed Building Consent (where appropriate) for alteration, demolition and for diminishing the curtilage of listed buildings. As elements of the options would involve a departure from local planning policy, the planning application would require referral to the Secretary of State and could be recovered for determination by the Secretary of State.

Because of the potential for significant impacts on the environment, it is likely that an Environmental Impact Assessment (EIA) would be required, so a Screening Opinion on the need for EIA should be requested from the local planning authority (Cherwell District Council) as one of the next steps in progressing the project. The scope of the EIA would also need to be agreed with the local planning authority.

The planning application would have to be supported by a number of technical documents (some of which could also form part of the EIA), including:

- Transport Assessment
- Heritage Assessment
- Archaeological Assessment
- Flood Risk Assessment and Drainage Strategy
- Noise and Vibration Assessment
- Air Quality Impact Assessment
- Visual Impact Assessment
- Tree Survey, Ecological Assessment and contaminated land reports

In terms of the likelihood of achieving planning permission, points to help the likelihood:

- In many ways, the options are broadly in line with national and local planning policies but it would be necessary to demonstrate no adverse environmental effects and that they would not result in unacceptable levels of noise, vibration, fumes etc., following appropriate mitigation measures. Should there be any residual environmental effects it would be necessary to demonstrate that they were outweighed by the benefits.
- All options would deliver a key local transport objective identified in the Local Transport Plan i.e. to develop a solution to the likely restrictions affecting London Road as a result of the East West Rail project. Thus they appear to be compatible with local transport policy (but have not been discussed with the County Council's transport policy officers and support cannot be assumed).
- None of the options considered in the report would impact on sites allocated or promoted for development in local planning policy documents.
- If harm to heritage assets cannot be avoided, then robust evidence would have to be provided to demonstrate that the option is an exceptional case which would achieve substantial public benefits outweighing the harm.
- The underpass options would result in the loss of significant numbers of residential properties which vary depending on the alignment.
- All options would result in the loss of employment units - mostly rated as "Good" and "Very Good" in the Employment Land Review (although one alignment would have significantly less impact on existing employment uses than the other two considered). To ensure compliance with planning

policy it would be necessary to demonstrate robustly that the benefits of the options would outweigh the value of retaining units for employment use.

As all options would require acquisition of multiple plots and interests in land, it would be necessary to obtain a Compulsory Purchase Order (CPO) for any scheme to deal with the level crossing. If a scheme is required on highway grounds, because of the disruption to traffic and pedestrians caused by repeated closure of the level crossing barriers, the CPO would be sought under Highways Act procedures. (If the works were undertaken as a railway project, it may be possible to seek a Transport and Works Act Order, which wraps up planning permission and compulsory purchase through a single process.)

It is important not to under-estimate the time and work required prior to applying for a CPO, and to be successful, the Acquiring Authority would need to prove a compelling case, in the public interest, for an option to be progressed – including that the public benefit would outweigh the private loss. It would also be necessary to demonstrate that no impediment to the scheme option i.e. internal approvals, funding, planning permission and all/any environmental consents were in place and that any alternative ways of delivering the scheme had been explored, i.e. both in terms of the finally selected option design/layout itself and to avoid the use of compulsory powers.

The cost of acquiring land for any option would be considerable, as it would involve loss of significant numbers of properties, relocation (or extinguishment) of businesses, temporary relocation of occupiers (residential and commercial) during the construction period and interference with large numbers of rights of access. As well as the heads of claim for properties which would have land taken/interests affected, compensation may also fall due after construction (under Part 1 of the Land Compensation Act 1973) where no land has been taken but the value of a property has been reduced by physical factors caused by use e.g. noise (from trains travelling over the new bridge, traffic, ventilation fans, drainage pumps etc.) and fumes.

The final estimates for anticipated final costs vary between £61 million and £65 million for the underpass options and a high level estimate of approximately £44 million for an overbridge option which has not been significantly developed. These indicative estimates are likely to be minimum costs due to the substantial known and unknown risks and their associated costs which have not been considered within the figures given.

This study does not include a final recommendation but seeks to present discussion of each solution without bias.