

**SUMMARY PROOF OF EVIDENCE OF STEPHEN BARKER  
ENGINEERING**



**THE CHILTERN RAILWAYS (BICESTER TO OXFORD IMPROVEMENTS) ORDER**

**TRANSPORT AND WORKS ACT 1992**

**TRANSPORT AND WORKS (APPLICATIONS AND OBJECTIONS PROCEDURE)  
(ENGLAND AND WALES) RULES 2006**

**Chiltern Railways**

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**24 SEPTEMBER 2010**

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## **1. QUALIFICATIONS AND EXPERIENCE**

- 1.1. My name is Stephen Barker. I am employed by The Chiltern Railway Company Ltd (“Chiltern Railways”) as the Infrastructure Interface Manager for the Evergreen 3 project. My qualifications and experience are set out in my main proof.

## **2. SCOPE AND NATURE OF EVIDENCE**

- 2.1. My evidence describes the scope of proposed infrastructure works and the development process that was undergone to determine that scope. It also describes the option development process that was undergone in respect of the main elements of the project.
- 2.2. My evidence addresses Secretary of State matters 2, 3 and 14 or aspects of them.
- 2.3. I also address matters raised by objectors.

## **3. SCHEME DEVELOPMENT**

- 3.1. The development process that led to the selection of the route via Bicester and the existing Bletchley – Oxford railway corridor as the means of providing the proposed London Marylebone – Oxford passenger train services is described in the evidence of Mr Allan Dare (CRCL/P/2/A).
- 3.2. A process of option development and selection was undergone in respect of the more significant features of the scheme, such as bridges, level crossings and stations. For each of these features, all relevant factors were considered and advice taken from relevant experts.
- 3.3. For some aspects of the scheme, a further iteration of design development was undertaken to take account of comments received during consultation exercises. Preferred options were selected and these form parts of the Order scheme.
- 3.4. The process undergone has ensured that the Order scheme represents the most appropriate solution for each of the engineering challenges encountered on the route.

## **4. ENGINEERING DESCRIPTION OF THE SCHEME**

- 4.1. The Order scheme briefly comprises:
  - construction of approximately 1km of new railway in Bicester
  - reconstruction of the existing Bletchley – Oxford railway between Bicester and Oxford North Junction, including:
    - closure and removal of all but one of the existing level crossings
    - construction of new bridges, roads and other mitigation measures as alternatives to the closed level crossings
    - reconstruction of Bicester Town and Islip stations
    - construction of a new station at Water Eaton
    - works to Wolvercot tunnel and certain other structures to facilitate future freight operations and electrification

- removal of most of the existing track
  - refurbishment and renewal of the railway formation
  - installation of new track
  - the reinstatement of approximately 1.6km of former railway in North Oxford
  - the widening of the railway bridge over the Rewley Abbey Stream in Oxford
  - construction of two new platforms at Oxford station
- 4.2. The detail of the works is described in my main proof
- 4.3. The work will be undertaken in phases, which are described in my main proof.

## **5. PROPOSED LINE SPEEDS**

- 5.1. The completed railway will be suitable for use by trains travelling at up to 100mph. Lower maximum speed limits will apply at certain locations, notably in Bicester and Oxford. The justification for the chosen speeds is given in my main proof.

## **6. SIGNALLING AND SAFETY EQUIPMENT**

- 6.1. The railway will be equipped with modern colour light signalling controlled from the existing Marylebone signalling centre. Track circuits will be used for train detection. AWS, TPWS and ATP<sup>1</sup> will be fitted to maximise the safety of train operations.

## **7. ADDITIONAL OPTION EXAMINATION POST ORDER APPLICATION INCLUDING POSSIBLE MODIFICATION AT LANGFORD LANE**

- 7.1. Following the Order application in January 2010, Chiltern Railways has engaged in consultation with Objectors in an attempt to address concerns. At the request of Objectors, additional work has been undertaken at a small number of locations to examine (or re-examine) alternatives to certain works proposed in the Order scheme.
- 7.2. The locations concerned and the work undertaken are described in my main proof.
- 7.3. At Langford Lane, this work has resulted in the decision by Chiltern Railways to promote a modification to the original Order scheme for consideration by the Secretary of State. The modification is described in my main proof. At all of the other sites, the Order scheme continues to provide the most appropriate solution.

## **8. STRATEGIC FIT OF ORDER SCHEME WITH OTHER SCHEMES AFFECTING OXFORD STATION**

- 8.1. A number of other schemes are currently in development that will affect the Oxford station area in the short to medium term. The Order scheme has been developed in a way that takes account of these schemes such that it does not

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<sup>1</sup> These acronyms are explained in my main proof.

prejudice and is not prejudiced by the implementation of any of those schemes.

## **9. CONTRACT ARRANGEMENTS FOR DETAILED DESIGN AND CONSTRUCTION**

- 9.1. The detailed design and construction of Phases 1 and 2A of the Order scheme was competitively tendered as part of a larger package of works including improvements to the London Marylebone – Birmingham Moor Street railway. The tender was published in the Official Journal of the European Union (OJEU) in April 2009. The contract was awarded to BAM Nuttall in December 2009.
- 9.2. The contract necessarily includes provisions to exclude or vary the Order scheme works to accord with the outcome of the Order application process.
- 9.3. The Phase 2B works will be subject of a separate contract that will form part of the wider East West Rail scheme.

## **10. CONSTRUCTION PROCESS AND PROGRAMME**

- 10.1. In order to reduce the overall length of the construction programme, it is proposed to close the existing railway in stages between Oxford North Junction and Bicester. Passenger services will be suspended for the duration of the construction works and freight services will be diverted via Greenford, Aylesbury and Claydon L&NE Junction as necessary to facilitate the closures.
- 10.2. It is anticipated that construction work will start within two months of the confirmation of the Order. It is presently anticipated that the construction works will take a total of around nine months to complete. However, this figure will be reviewed as the detailed design of the scheme progresses.
- 10.3. In order to facilitate the swift commencement of work following confirmation of the Order, Chiltern Railways is presently considering undertaking certain seasonally-constrained ecological mitigation works in advance of the Order being confirmed. The relevant works can be done without prior authorisation.
- 10.4. Full details of the construction process and programme are given in my main proof.

## **11. OUTSTANDING ENGINEERING AND CONSTRUCTION OBJECTIONS**

- 11.1. A number of Objectors have raised issues relating to engineering and construction matters. The main issues raised are:
  - Impact on navigable waterways
  - Closure of Aristotle Lane level crossing and adequacy of proposed mitigation measures
  - Mitigation of impacts on residential property in north Oxford
  - Use of land for access to construction work sites
  - Adequacy and appropriateness of bridge proposed to replace Islip (Mill Lane) level crossing

- Adequacy and appropriateness of bridge and other mitigation measures proposed to replace Manor Farm, Home Farm, Beebont and Holts Farm level crossings
- Extent of third party land required for construction of the new section of railway in Bicester.

11.2. My main proof addresses these issues.

## **12. CONCLUSIONS**

- 12.1. The Order scheme has undergone an extensive and robust process of development. A range of alternatives for the major elements of the scheme have been considered and evaluated and the options that have been taken forward to make up the Order scheme represent the most appropriate solution to the particular engineering problem.
- 12.2. The scheme works have been designed in accordance with Railway Group Standards and other relevant standards, and the need to acquire third party land has been kept to the minimum necessarily required for the safe, economic and efficient construction and operation of the proposed railway.