TRANSPORT AND WORKS ACT 1992

TRANSPORT AND WORKS (INQUIRIES PROCEDURE) RULES 2004

THE NETWORK RAIL (CAMBRIDGE RE-SIGNALLING) ORDER

PROOF OF EVIDENCE - SCHEME OVERVIEW, NEED AND DEVELOPMENT

STATEMENT OF EMILY HERIA

15 March 2023

1. INTRODUCTION AND STATEMENT OF EXPERIENCE

- 1.1 I, Emily Heria, am a Senior Sponsor at Network Rail Infrastructure Limited (Network Rail) of 1 Eversholt Street, London NW1 2DN. My role at Network Rail as Senior Sponsor began in February 2022 and consists of being accountable for the budget and programme of Network Rail's major renewals portfolio on the Anglia route which sits within Network Rail's Eastern Region.
- 1.2 I have been in the Anglia Sponsorship team since 2016 sponsoring a variety of projects including route enhancements, department for transport access for all schemes and presently the renewals portfolio.

2. INVOLVEMENT WITH THE PROJECT AND STRUCTURE OF THIS STATEMENT

- 2.1 Network Rail proposes the re-signalling of the Cambridge station interlocking area and the upgrade of a number of level crossings (**Project**), as further outlined below. I have been the sponsor of this project since February 2022.
- 2.2 In this Statement I set out:
 - a. the nature of the Applicant;
 - b. the Project and need for the Project, including its benefits;
 - c. the development of the Project;
 - d. approach to consultation;
 - e. costs and funding; and
 - f. representations and objections received in response to the Order application.
 - 2.3 The below evidence addresses the matters raised at paragraph 1, 2, 4 and 5 of the Secretary of State's Statement of Matters dated 9 March 2023 (**Statement of Matters**).

3. APPLICANT

Network Rail

- 3.1 Network Rail owns and operates the rail infrastructure of Great Britain (**Network**). Its purpose is to deliver a safe, reliable and efficient railway for Great Britain.
- 3.2 Network Rail is primarily responsible for the maintenance, repair and renewal of track, stations, signalling and electrical control equipment. Train services on the network are operated by Train Operating Companies (TOC) and Freight Operating Companies (FOC) to

which Network Rail, as facility owner, grants rights to use the network in the form of track, station, and depot access contracts approved by the Officer of Rail and Road (**ORR**).

Network Rail's Licence Obligations

- 3.3 The activities of Network Rail as network operator are regulated by the ORR by mean of a network licence granted under section 8 of the Railways Act 1993 [EH1]. The network licence requires Network Rail to secure the renewal and replacement of the network, and the improvement, enhancement and development of the network, in each case in accordance with best practice and in a timely, economic and efficient manner so as to satisfy the reasonable requirements of persons providing services relating to railways and funders in respect of the quality and capability of the network.
- 3.4 As the infrastructure manager, Network Rail is also under a duty as regards the safety of the network, principally under the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS). The ROGS implement the EU Railway Safety Directive and require that any Infrastructure Manager or railway operator on the mainline railway must maintain a Safety Management System (SMS) and hold a safety certificate or authorisation indicating that the SMS has been accepted by the relevant safety authority, before being allowed to operate. The ROGS are EU-derived domestic legislation which I am advised continue to have effect in accordance with section 2 of the European Unit (Withdrawal) Act 2018.

4. THE SECRETARY OF STATE'S STATEMENT OF MATTERS

- 4.1 The Statement of Matters issued by the Secretary of State for Transport sets out for the purposes of rule 7(6) of the Transport and Works (Inquiries Procedure) Rules 2004 the matters about which the Secretary of State for Transport particularly wishes to be informed for the purposes of his consideration of this application.
- 4.2 With respect to the matters raised, these have been covered in Network Rail's evidence and Order application documents as set out in the table below:

Issues Raised in Statement of Matters

No.	Matter	Covered within
1.	The aims and objectives of, and the need for, the proposed Cambridge Re-Signalling ("the scheme"), including its effects on railway operations.	The aims and objectives of, and the need for the Project are set out in my Proof of Evidence, as well as Network Rail's Statement of Case.
2.	The main alternative options considered by NR and the reasons for choosing the preferred option set out in the Order.	My Proof of Evidence briefly considers alternatives considered by Network Rail and the benefits of the preferred option (i.e. the Project). The specific level crossings upgrade alternatives that were considered by Network Rail are

		set out in Mr Prest's Proof of Evidence.
3.	The likely impact of the exercise of the powers in the proposed TWA Order scheme on local businesses, residents and crossing users. Consideration under this heading should include, on a crossing-by-crossing basis:	
	 (a) the safety of crossing users. (b) the impacts of the changes on crossing users including motorised vehicles, pedestrians, cyclists and other non-motorised users. This should include the Applicant's modelling on the scheme's effects on journey times, congestion, air pollution, accessibility for different groups, access arrangements (including the effect of changes to down times on access to stations), and the blue light routes for emergency traffic. (c) the impact on designated sites and species including sites of special scientific interest, scheduled ancient monuments, trees subject to tree preservation orders, and listed buildings. (d) the impact on the current owners and occupiers of the land to be acquired, including their amenity, access arrangements, and ability to carry out maintenance. 	Mr Prest's Proof of Evidence addresses these matters in terms of the safety of the individual level crossings. Nicolas Contentin's Proof of Evidence addresses the impacts of the proposed level crossings upgrades on crossing users. Mr Gilbey's Proofs of Evidence consider impacts in terms of the acquisition and use of land. Mr Stamp's Proof of Evidence addresses some of these matters insofar as they are relevant to planning.
4.	The impacts and interaction of the scheme with future planned developments including at Waterbeach New Town.	This is addressed in my proof of evidence, as well as Mr Stamp's Proof of Evidence.
5.	The effects of the scheme on statutory undertakers, statutory utilities and other utility provides, and their ability to carry out their undertakings effectively, safely and in compliance with any statutory or contractual obligations and the protective provisions afforded to them.	This is addressed in my Proof of Evidence.
6.	Having regard to the criteria for justifying compulsory purchase powers in paragraphs 12 to 15 of the MHCLG Guidance on the "Compulsory purchase process and the Crichel Down Rules for	Mr Gilbey's Proof of Evidence sets out the Project's approach to the use of compulsory acquisition powers and includes consideration of the

I	the Proceeds to select the 2000	1. (f
	the disposal of surplus land acquired by, or under the threat of, compulsion" published on 29 October 2015 (s amended on 28 February 2018):-	interference with the human rights of those affected. My Proof of Evidence provides support for the proposed
	(a) whether there is a compelling case in the public interest to justify conferring on NR powers to compulsorily acquire and use land for the purposes of the scheme.	acquisition of land in terms of the overall need for the Project and the benefits it will deliver. It also explains the funding position for the Project.
	(b) whether the purposes for which the compulsory purchase powers are sought are sufficient to justify interfering with the human rights of those with an interest in the land affect (having regard to Human Rights Act);	Mr Prest's Proof of Evidence considers technical aspects of the Project and the safety case for the proposed Level Crossings upgrades.
	(c) whether there are likely to be any impediments to NR exercising the powers contained within the Order, including the availability of funding;(d) whether all the land and rights over land which NR has applied for is necessary to implement the scheme.	Mr Stamp's Proof of Evidence considers the planning position and additional consents sought by Network Rail and confirms that Network Rail is not aware of any impediments to Network Rail exercising the powers contained within the Order.
7.	The outcome of the two planning applications currently being considered by the Local Planning Authority.	This is addressed in Mr Stamp's Proof of Evidence.
8.	Whether all statutory procedural requirements have been complied with.	This will be addressed in the note to be submitted by the Applicant to the Inquiry.
9.	Any other matters which may be raised at the inquiry which may be important and relevant to the Secretary of State's decision.	

5. PROJECT AND NEED FOR THE PROJECT

Project

- 5.1 The overall objective of the Project is to renew the life expired signalling assets in the Cambridge 'interlocking' area and the replacement of the mechanical signalling system, constructed during the 1980s, with a modern digital signalling system managed from a centralised location, namely the Power Signal Box (**PSB**) at Cambridge Station. If the Project was not to be implemented, there would be a risk of poor asset reliability and reduced capacity on the relevant sections of railway in the event that routes or assets are out of use because of signalling failures.
- 5.2 Consequently, the Project will involve the following works:

- a. the decommissioning of the Dullingham, Chippenham Junction and Bury St Edmunds signal boxes; the existing mechanical signal boxes will be decommissioned and replaced with a modern, digital Visual Display unit workstation located at Cambridge Station;
- b. the upgrade of the signalling power supply in the area including the installation of relocatable equipment building (**REB**) and a power supply along the route;
- c. the upgrade of the existing telecoms network to a modern fixed telecommunications fibre optic network where required;
- d. the renewal of the signalling at Chippenham Junction; and
- e. re-locking, and thereby extending the life of, six adjacent interlock areas. A re-lock involves changing the interlocking sequence of the signalling system so that a signalling lever move that was previously not possible is made possible (or vice versa) without changing what each signalling lever actually does.
- f. the upgrade of seven level crossings and the installation of Relocatable Equipment Buildings (**REB**) and ancillary works, as further set out in the Order application documents and Network Rail's Statement of Case [**EH2**].
- 5.3 The proposed upgrades will improve the Fatality and Weighted Injury Score (**FWI**) for each crossing and Network Rail Anglia Route overall due to the total combined effects of the proposed upgrades. In addition, the upgrade will enable compliance with the Office of Rail and Road's (**ORR**) requirement to improve safety by moving away from automatic half-barrier crossings.
- As part of the upgrades, the Project also proposes improvements to the existing footways providing increased widths depending on the volume of pedestrians at each level crossing to comply with the ORR guidance (Office of Rail and Road Level Crossings: A guide for managers, designers and operators, December 2011). These works will be authorised under the Town and Country Planning Act 1990 regime and are not included in the Order. No stopping up is required in relation to the proposed upgrades.

Alternatives considered

- 5.5 The following paragraph addresses the matter raised at paragraph 2 of the Statement of Matters: "the main alternative options considered by NR and the reasons for choosing the preferred option set out in the Order". Mr Prest's Proof of Evidence also covers alternative upgrade options considered for each level crossing.
- 5.6 Network Rail has considered undertaking the proposed level crossings upgrades individually (rather than as part of the wider Cambridge Re-Signalling Project). The reason why the level crossings upgrades are proposed to be carried out at the same time as the rest of the Project is due to the identified programme and cost benefits of doing so. In particular:
 - a. The combined signalling upgrade undertaken as part of the wider Project reduces the capital cost through increased engineering and construction synergies. Closures of the railway require payments to be made to the train operators for disruption. Delivering the proposed level crossings upgrades together with the wider Cambridge Re-signalling project removes the need for further closures and compensation costs. Furthermore, as Network Rail will have a construction team mobilised for the wider Cambridge Re-signalling project, undertaking the proposed

level crossings upgrades at the same time will mean reduced preliminary costs for the level crossings upgrades. Finally, when a level crossing is upgraded with new technology the updated type of crossing should be indicated on the signaller's workstation, and this upgraded technology (such as obstacle detection) will need to communicate additional information to the signaller compared to the existing AHB crossing. The signalling data that communicates with the workstation is being updated under the Cambridge re-signalling project as part of the main scope of work so the opportunity to undertake the crossing updates at the same time provides further cost savings.

- b. Combining the signalling upgrade and level crossing works will result in reduced impacts on train services, the surrounding road network and the wider environment by reducing the need to undertake line or road closures at later dates.
- 5.7 There is a single source of agreed funding for the combined scheme. If the level crossing changes were not delivered as part of the Cambridge Re-signalling project, there would not be alternative funding available at this time to make the proposed safety improvements and it is unclear when it would next become available. Overall, the wider benefits of the Project include:
 - a. renewal of existing assets to enable safe operation of the railway;
 - b. improved reliability of the signalling infrastructure;
 - c. improved performance of the signalling infrastructure;
 - d. improved FWI scores in compliance with ORR requirements, improving safety by moving away from automatic half barrier (AHB) crossings at the relevant level crossings;
 - e. improved maintainability of the signalling infrastructure;
 - f. enhanced safety of the railway;
 - g. reduced operational cost.
- In addition to the above, the proposed renewal of the interlocking and of Cambridge PSB to a modern control centre is a key enabler to the Ely area capacity enhancements and the resignalling of Peterborough-Ely-Kings Lynn, which will follow once funding is received by Network Rail. The Project also enables schemes for freight enhanced operations and cross-country national services owing to its location.
- 5.9 Finally, the upgrade of the signalling equipment will make this area of the route ready for digital railway to be implemented in future.

Need for the Project

5.10 In railway signalling terminology, an 'interlocking' is an arrangement of signal apparatus that prevents conflicting rail movements through an arrangement of tracks such as junctions or crossings. The interlocking itself is the processing system which takes the inputs from the lineside equipment and signaller's requests and processes this information to ensure that the route cannot be set unless safe. An interlocking is designed so that it is impossible to display a signal to proceed unless the route to be used is proven safe.

- 5.11 The Cambridge interlocking was installed and commissioned in 1982 and, due to its age, is now deemed life expired. It has a number of obsolete components as well as severe wire degradation and a renewal is required. Within the Cambridge interlocking area, the existing Dullingham, Chippenham Junction and Bury St Edmunds Signal Boxes, that form part of the signalling system, are all mechanical signal boxes (traditional entrance/exist signal box control panels) that are now considered to have reached the end of their useful lives which results in decreased asset reliability
- 5.12 The interlocking was due to be renewed in Control Period 5 (Network Rail's five-year funding cycle from April 2014 to March 2019). However, due to funding constraints, it was deferred to Control Period 6 (Network Rail's five-year funding cycle from April 2019 to March 2024).
- 5.13 The Project aims to extend the life of the existing interlocking system by a further 35 years and improve asset reliability and performance of the signalling system in the Cambridge area. The selected signalling option is a full renewal of existing interlockings and lineside equipment. This is by far the safest option as the renewal includes lineside cabling (the equipment that transmits the signalling information and locations) which improves reliability of the whole system (several of the considered options would have retained existing locations and lineside cabling).
- 5.14 The proposed full renewal provides a far more reliable signalling system and will reduce equipment failures, thus reducing the amount of time where a degraded operation of the network is required. The removal of the three existing mechanical signal boxes will allow the crossings to be operated on a modern visual display unit (**VDU**) control system.
- 5.15 The replacement of the existing track circuits with axle counters, which count the trains coming in and out of a section of track by using its wheels (also proposed to be delivered as part of the Project) is also a benefit to safety as the axle counter system is more reliable and robust. The more reliable axle counter system results in fewer failures and ultimately less time on site is required for maintenance and faulting teams. The axle counter equipment will likely be centralised within new relocatable equipment buildings, and this will again reduce the time staff are required to spend on the lineside infrastructure if a fault were to occur.
- 5.16 The proposed upgrade of 7 level crossings and the need for the upgrades is described in detail in Mr Prest's Proof of Evidence. However, in summary, the proposed upgrades are required due to asset condition and risk assessment recommendations. The upgrades will improve the Fatality and Weighted Injury scores of the level crossings in compliance with ORR requirements to improve safety by moving away from automatic half barrier crossings.
- 5.17 Other safety interventions to close the level crossings would not be practical from a cost perspective given the cost of delivering the works and the additional land take that would be required to construct a footbridge or underpass. The costs for these locations would need to be reviewed but as an indicative value, Network Rail unit cost for a footbridge installation has been estimated at £6.9m. The cost of an underpass project currently in development to close a level crossing in Essex is estimated at £23m.
- 5.18 The Waterbeach station relocation and new town project is currently in development. Planning permission was granted in 2019, and a second planning application is still under consideration by the local planning authority. The station relocation project team will need to consider any further impacts to the level crossing and resulting obligations as part of the development of their scheme. Within NR's consultation responses to planning applications S/0559/17/OL and S/2075/18/O NR raised matters relating to the proposed upgrade of the

Waterbeach level crossing and that the 3rd party applicants should have considered the impact of the level crossing upgrade within their applications/transport assessments.

6. DEVELOPMENT OF THE PROJECT

- 6.1 The Project has been developed through a robust option selection process, which is described in detail in Mr Prest's Proof of Evidence.
- 6.2 Workshops were attended by an appropriate combination of stakeholders and technical experts, including Network Rail's client asset management and operations, project team and Amey designers.
- 6.3 The preferred options represent an approach that is considered to meet Network Rail's requirements, is cost effective and requires the least disruptive access.

7. CONSULTATION

7.1 This section summarises the consultation undertaken by Network Rail detailed further in the Consultation Report **[EH3]** submitted with the Order application.

Early engagement

- 7.2 The local community has been engaged on the Project through information in local media and information on Network Rail's website.
- 7.3 Presentations to key stakeholders, including the local planning and highway authorities as well as local councillors were undertaken in January/February 2021 prior to the public consultation.
- 7.4 A single round of public consultation was carried out in March 2021. Noting Government Covid restrictions in place at the time, this event was undertaken primarily using digital techniques through Network Rail Citizen Space and the Project website.
- 7.5 The event was publicised through a number of traditional consultation methods including leaflet drops, media advertisement and information boards at relevant stations.
- 7.6 The digital approach was supplemented by more traditional methods of consultation such as offers of direct written, e-mail or telephone correspondence with the Project Stakeholder Manager.

Statutory consultation

- 7.7 At the same time as the public consultation, statutory consultation was undertaken with:
 - a. landowners and tenants of, as well as those with rights in, any land potentially affected by the Project (undertaken by Network Rail's agent (Brown & Co) and Network Rail's Property and Liabilities teams (Eastern Region);
 - statutory bodies such as the Environment Agency, Natural England and Historic England, as well as other statutory consultees, such as the ORR (undertaken by Network Rail's Portfolio and Consent Managers along with their Transport Consultant (Modelling Group), Consent Manager and the Projects Stakeholder Manager);

- c. key stakeholders such as the local planning and highway authorities (undertaken by Network Rail's Portfolio and Consent Managers along with their Transport Consultant (Modelling Group) and the Project Stakeholder Manager); and
- d. strategic stakeholders such as MPs, Local Councillors and Parish Councils (undertaken by the Projects Stakeholder Manager and the Senior Communications Manager (Anglia)).
- 7.8 Changes made to the Project and, in particular, extent of land and stopping-up powers required for the purposes of the Project are further described in Mr Gilbey's and Mr Deacon's Proofs of Evidence.

Ongoing engagement

7.9 Engagement with Project stakeholders has continued following the submission of the Order application and is currently ongoing.

8. EFFECTS OF THE SCHEME ON UTILITY PROVIDERS

- 8.1 This paragraph addresses the matters raised at paragraph of the Statement of Matters: "the effects of the scheme on statutory undertakers, statutory utilities and other utility provides, and their ability to carry out their undertakings effectively, safety and in compliance with any statutory or contractual obligations and the protective provisions afforded to them".
- 8.2 No objections to the Order and/or the Project generally have been received from any statutory undertakers.
- 8.3 More generally, the impacts on utility providers and, if required, the mitigation of any adverse impacts, will be through the use of professional designers and contractors by Network Rail who will engage with the utility companies to identify and protect utilities as standard practice. The protective provisions included in Schedule 6 of the draft Order provide additional safeguards for utility providers.

9. COSTS AND FUNDING

- 9.1 This paragraph partly addresses the matters raised at 5(c) of the Statement of Matters: "whether there are likely to be any impediments to NR exercising the powers contained within the Order, including the availability of funding".
- 9.2 As stated in the Funding Statement **[EH4]** and reiterated in the Statement of Case, the Project is fully funded by the UK Government to the total estimated costs of £193,49m.

10. OBJECTIONS

- 10.1 The objection period for the Order closed on 23 September 2022. A total of 30 objections and 5 representations were received.
- 10.2 Importantly, none of the objections dispute the need for the re-signalling element of the Project.
- 10.3 Out of 30 letters of objection, five objections were received from statutory objectors whose land is proposed to be acquired compulsorily pursuant to the provisions of the Order.

- 10.4 The vast majority of objections and representations related to the proposed upgrade of Meldreth Level Crossing from an AHB crossing to a Manually Controlled Barrier with Closed Circuit Television (MCB-CCTV).
- 10.5 Letters have been sent to all who responded, in the case of representations and objections answering queries raised and providing responses where required. A series of engagement meetings have been held with the statutory objectors with a view to understanding which issues can be resolved to enable the objection to be withdrawn. There has also been further engagement with many of the other objectors, as outlined in the Statement of Case.

Shepreth Parish Council Statement of Case

- 10.6 Whilst most of the objections raised do not include points relevant to the subject matter of this proof, I note that the Statement of Case submitted on behalf of Shepreth Parish Council (Parish Council) questions the design of the Project and provides that "there is no justification for the proposed depot and associated parking, which will destroy a sensitive visual environment." The Parish Council's Statement of Case further provides that there is an existing depot space at Shepreth Station and there is also substantial depot space minutes away at Foxton.
- 10.7 This is something that had not been raised by the Parish Council until they provided their Statement of Case and Network Rail has, therefore, not had a chance to comment on this point previously. However, I do note that no depots are proposed to be constructed as part of the Project. Instead, Network Rail is proposing to install level crossing equipment and to create a parking compound at Meldreth level crossing.
- 10.8 The proposed railway equipment is required to ensure the safe and efficient running of the upgraded level crossing at this location. Within this land parcel an area of approximately 220sqm is proposed to house equipment inside the railway fence line. This will include a crossing control with a telephone, 6 metre high CCTV column and a Distribution Network Operator cubicle. Railway and level crossing control equipment will be housed in a new modular building in the south-east corner of the land parcel. This equipment is required at this location for the operator to locally control the level crossing. It is not possible to locate this equipment at the existing depot space at Sherpeth Station or Foxton, as such equipment must be provided close to the level crossing it relate to. Shepreth and Foxton stations are approximately 500 metre and 2.5km to the north-west respectively.
- A 320m2 approx. secure compound for vehicular parking with a new vehicular entrance (50m2 approx.) is also proposed at this location to allow ongoing infrequent maintenance of the level crossing and the proposed railway equipment. The location of this parking compound at the locations noted in the Parish Council's Statement of Case is not feasible noting the distances Network Rail staff would have to travel by foot with maintenance equipment. The remainder of the land parcel will not include physical development. Authorisation for these works has been sought through the Town and Country Planning process (South Cambs District Council planning ref: 22/05204/FUL).
- 10.10 The landscape and visual impact issue is addressed in Mr Stamp's Proof of Evidence.
- 10.11 Mr Gilbey's and Mr Stancliffe's Proofs of Evidence provide more detail in respect of the land and rights sought, and Mr Prest's Proof of Evidence provides more detail on the proposed level crossings upgrades. At the date of this Statement, objections submitted on behalf of Norfolk County Council and Cambridgeshire County Council have been withdrawn. Discussions with other parties are progressing well and further withdrawals are anticipated

in advance of the Public Inquiry. The Inquiry will be kept updated of further withdrawals as they are secured.

11. CONCLUSION

11.1 As the Sponsor I conclude that the Project provides an excellent opportunity to renew the life expired signalling assets in the Cambridge 'interlocking' area and to replace the

mechanical signalling system. It also provides the opportunity to deliver safety upgrades at 7 level crossings, utilising tax-payer funding efficiently and minimising disruption for

passengers.

11.2 The Project is fully funded, the designs have been put in place to undertake the proposed

level crossings upgrades and I do not consider there are any impediments to Network Rail

exercising the powers contained within the Order.

11.3 Network Rail has consulted extensively with the stakeholders and objectors and, while it is appreciated that Automatic Half Barrier crossings can be popular with level crossing users

(due to lower barrier down time), the safety case for the crossing upgrades, as well as

minimal changes to queueing times, are clearly demonstrated in the modelling undertaken

by Network Rail and justify the need for the proposed safety improvements.

11.4 The Order will enable these important works to take place in time and cost-effective manner,

as part of the wider Cambridge Re-Signalling project.

11.5 I urge the inspector to consider this evidence, in conjunction with that of my colleagues, and

I respectfully request the inspector to recommend that the Order be made, and that the relevant powers required by Network Rail to complete the Project are granted.

12. WITNESS DECLARATION

12.1 This proof of evidence includes all facts which I regard as being relevant to the opinions

that I have expressed and that the Inquiry's attention has been drawn to any matter which

would affect the validity of that opinion.

12.2 I believe the facts that I have stated in this proof of evidence are true and that the opinions

expressed are correct.

12.3 I understand my duty to the Inquiry to help it with the matters within my expertise and I have

complied with that duty.

EMILY HERIA

Dated: 15 March 2023

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