

**AVISON
YOUNG**



Meldreth Road (Shepreth) Level Crossing Upgrade

Planning, Design and Access Statement

November 2022

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For and on behalf of Avison Young (UK) Limited

1. Introduction

1.1 This Planning Statement has been prepared in order to support a Full Planning Application in relation to the proposed upgrade works located at *Meldreth Level Crossing (Shepreth), Meldreth Road, Royston, South Cambridgeshire, SG8 6XA*. The proposal comprises the proposed upgrade of Network Rail's Meldreth Level Crossing from an Automatic Half Barrier (AHBC) Level Crossing to a Manually Controlled Barrier (MCB-CCTV) type.

1.2 The proposed Description of Development is stated as:

“Change of use to Operational Railway Land, plus installation of new level crossing barriers, Smart IO Housing equipment, road traffic lighting signals, and associated lighting, landscaping and fencing.”

1.3 The proposal is located within the administrative area of South Cambridgeshire District Council.

The Cambridge Re-signalling, Re-lock and Re-control Project (C3R)

1.4 Network Rail are investing £194 million to renew the signalling system for the Cambridge area and improve efficiency and reliability for passengers and freight users. Signalling systems are essential to the safe and efficient operation of the railway. With the demands to run more trains, there is a need to modernise the existing signalling systems which are coming to the end of their operational life and replace them with a modern system that can unlock the ability to operate the railway more efficiently. The extent of the project locations is shown below in **Figure 1**.

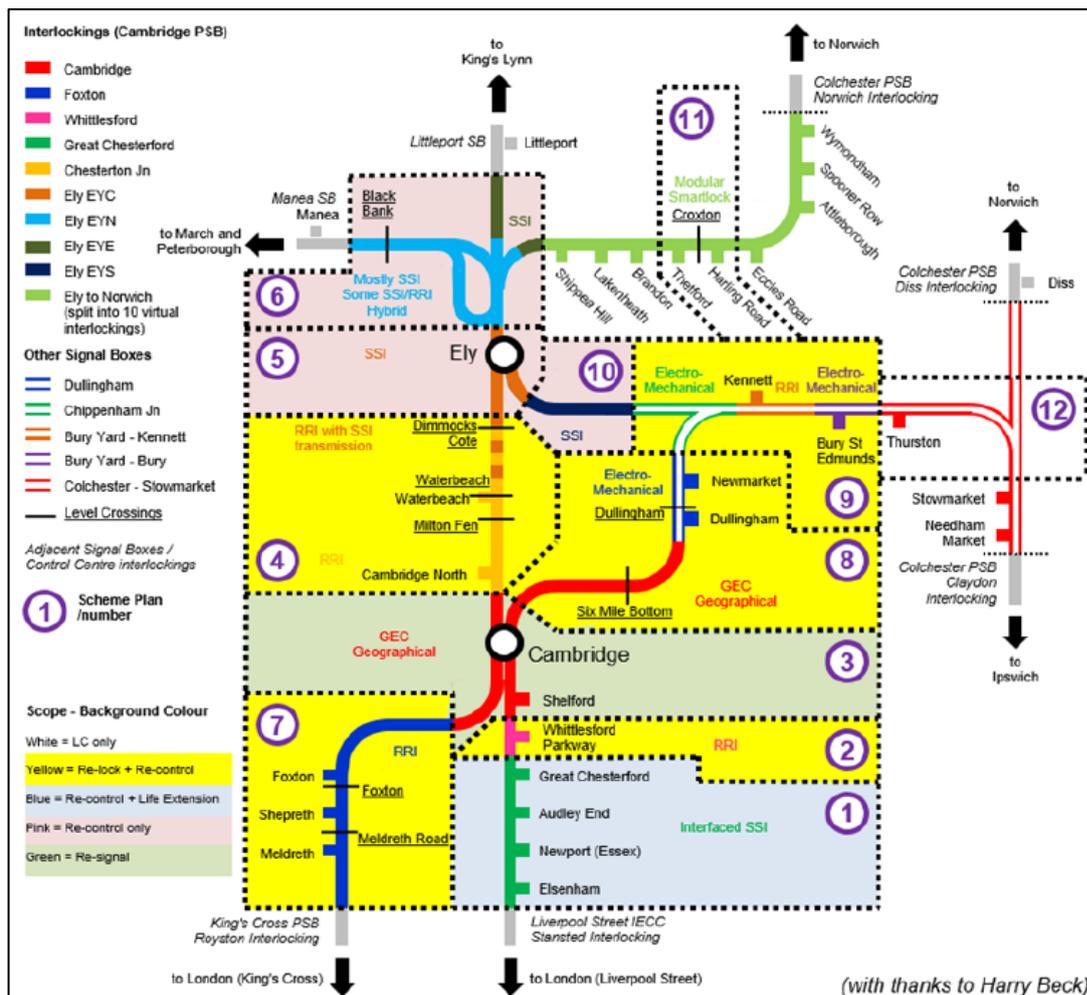


Figure 1 – C3R Project Location Diagram

- 1.5 Network Rail's Cambridge Re-signalling, Re-lock and Re-control project (C3R) aims to deliver state-of-the-art signalling technology for the railway which will mean better reliability and reduced maintenance, while providing a platform ready for digital technologies such as the European Train Control System (ETCS). The CR3 project is an upgrade/renewal scheme covering an area which includes 125 miles of track, from Meldreth and Elsenham to the south, through Cambridge, up to Ely in the north and Thurston to the east. The project plans include the following proposals:
- Upgrade of the signalling control equipment at Cambridge power signal box;
 - The upgrade of the signalling safety interlocking equipment with a modern signalling technology;
 - Renewal of the telecommunications and power supplies to support the new systems;
 - Decommissioning of three mechanical signal boxes and relocating control of signalling to the Cambridge power signal box; and
 - Upgrade of seven level crossings from half barrier to full barriers to improve safety for all crossing users.
- 1.6 Following public consultation in 2021, an application for a Transport and Works Act order (TWAO) to authorise Network Rail to compulsorily acquire land, rights in land and take temporary possession of same to facilitate the works required for the re-signalling of the Cambridge station interlocking area and the upgrade of relevant level crossings, was submitted on 5 August 2022 to the Secretary of State for Transport. Further detail on the TWAO process and all documentation can be found at <https://www.networkrail.co.uk/running-the-railway/our-routes/anglia/improving-the-railway-in-anglia/cambridge-resignalling/>

Submission Documents

- 1.7 The C3R project includes upgrade works at the site of the Meldreth level crossing. As such, the following information and supporting material have been submitted as part of this application for full planning permission to South Cambridgeshire District Council ('the Council'):
- Site Location Plan:
 - *'7951370-7 - Planning Site Location Plan_Meldreth_RevG'*
 - Existing and Proposed Drawings:
 - *'157001-NRD-DRG-ESG-000007 Meldreth PA-P-Ver A03'*
 - *'157001-NRD-DRG-ESG-000008 Meldreth PA-E-Ver A02'*
 - *'157001-NRD-DRG-ESG-000124 Meldreth PA-P-Parking Ver A02'*
 - Transport Assessment (Caneparo Associates)
 - *'Transport Assessment_November 2022'*
 - Preliminary Ecological Appraisal Report (RSK Biocensus)
 - *'CR3 Re-signalling Project – Preliminary Ecological Appraisal Report_2484080_Rev 00 - Aug 2022'*

- Ecological Impact Assessment (RSK Biocensus)
 - *'CR3 Re-signalling Project – Ecological Impact Assessment_2484080_FINAL – Nov 2022'*
- Arboricultural Impact Assessment (RSK Biocensus)
 - *'Meldreth Level Crossing_2484085_Rev 1 – 12 November 2022'*
- Surface Water Strategy Statement at LX Sites (Alstom)
 - *'157001-ALS-REP-EEN-000005_P02'*
- Construction Management Plan (Alstom)
 - *'157001-ALS-PLN-EEN-000008_P02'*
- Utilities Assessment (Alstom)
 - *'Ref: 157001-ALS REP EEN 000004_RevP02'*
- Sustainability Statement (Alstom)
 - *'157001-ALS-REP-EEN-000002_P02'*
- Carbon Assessment Report (Alstom)
 - *'157001-ALS-PLN-EEN-000005_Rev1A'*

2. Site Context & Planning History

Site Context

2.1 The site, which is located at *Meldreth Level Crossing (Shepreth), Meldreth Road, Royston, South Cambridgeshire, SG8 6XA*, is located on the western edge of Shepreth village and approx. 12km south of the city of Cambridge. Meldreth Road crosses the railway at Meldreth Level Crossing in a north-easterly direction. The Site Location is shown below in **Figure 2**.

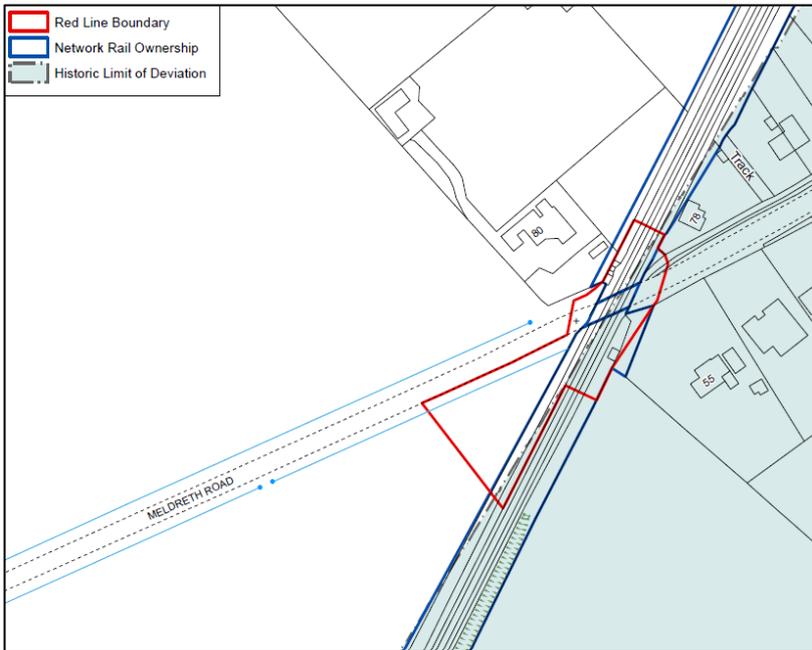


Figure 2 - Site Location of Proposed Development

2.2 The Site is bound to the north west, north east and south east by residential properties and associated gardens. Pedestrian and vehicular access to the Site is directly from Meldreth Road. A series of site context photos are provided below in **Figure 3**:





Figure 3 - Existing Site Photos

- 2.3 Shepreth Station is located approximately 600m to the north-east of the Site and provides Greater Anglia and Thameslink railway services to Cambridge and London Kings Cross.
- 2.4 The site is not in a Conservation Area, nor are any buildings within the curtilage of the site statutorily or locally listed. The Moated site 170m south west of Tyrell's Hall which is a Scheduled Monument is located approx. 500m to the south-east of the level crossing. The closest Listed Building (Barns at Number 19 Rose Cottage Grade II) is located approx. 400m to the north-east.
- 2.5 The application site area is located within Flood Zone 1, an area with a low probability of flooding according to the Environment Agency's Flood Map for Planning. The closest biodiversity-related sensitive area to the level crossing is the nationally designated L-Moor, Shepreth SSSI which is located 200m south of the level crossing, with the railway line to the south running through the SSSI. There are no Tree Preservation Orders (TPOs) on or adjacent to the site.

Planning History

- 2.6 The following section provides a review of the site's recent planning history and has been compiled using the South Cambridgeshire's online planning register:
- On 7th July 2021, Environmental Impact Assessment Screening Opinion Requests were submitted to the Council for 'EIA screening opinion for Cambridge Re-Signalling, Re-Lock and Re-Control Project (CR3) (ref: 21/03253/SCRE & 21/03205/SCRE). On 27th July 2021, the Council confirmed that the proposal did not fall within the scope of the EIA Regulations and an Environment Statement was not required.

3. Proposed Development

- 3.1 The proposal involves the upgrade of Network Rail's Meldreth Level Crossing from a AHB Level Crossing to a MCB Level Crossing. The upgrade to an MCB Level Crossing will improve safety for crossing users and crossing operators, address the deteriorating condition of the current asset, improve reliability of the crossing and reduce road closure time helping to ease traffic congestion in the area.
- 3.2 The proposed Description of Development is stated as:

"Change of use to Operational Railway Land, plus installation of new level crossing barriers, Smart IO Housing equipment, road traffic lighting signals, and associated lighting, landscaping and fencing."

Existing Arrangement

- 3.3 The existing level crossing is an Automatic Half Barrier (AHB) level crossing (shown below in **Figure 4**). This type of crossing is activated automatically by approaching trains. The level crossing has 2 barriers which close over the approach side of the carriageway only, leaving the offside of the carriageway open.
- 3.4 A modular Relocatable Equipment Building (REB) in the northeast corner houses the level crossing control equipment.
- 3.5 A Road Traffic Light Signal (RTLS) is provided in each corner of the level crossing facing along the road approach with 'keep crossing clear' signage attached to the same post and, in the offside corners, 'another train coming' signs. Audible warning devices are affixed to the rear of the nearside RTLS to provide audible warning to pedestrians. Telephones with associated signage are provided for emergency use and are affixed the RTLS posts in the offside corners.
- 3.6 Signage is provided on the left-hand side of the road to give advanced warning to vehicles of the level crossing ahead and to instruct drivers to stop when the lights show. Further signage is provided on the left-hand side of the road to instruct drivers of large or slow vehicles to stop and request permission to cross before traversing the railway. In addition, warning sign assemblies are provided on the left-hand side of the road to warn drivers of the overhead line electrification and details of a 'safe-height'. Additional signage is provided on both sides of the road on each approach instructing users on where to park when using the telephone before and after traversing the railway.



Figure 4: Existing Level Crossing Barrier Photograph (looking east)

Proposed Arrangement

- 3.7 The proposed works are to replace the existing MCG, and it be renewed as a Manually Controlled Barrier crossing Supervised by Circuit Controlled Television (MCB-CCTV). This includes installation of new modular Relocatable Equipment Building (REB). All fencing and equipment around level crossing will be renewed.
- 3.8 This type of crossing is activated by approaching trains or by the signaller and is protected by signals on each railway approach which clear to allow passage of trains when the signaller observes that the crossing area is clear via CCTV cameras provided at the crossing.
- 3.9 All existing equipment described above, in the existing arrangement, is to be removed from site.
- 3.10 A barrier will be provided in each corner of the level crossing which lowers across the full width of the carriageway and footways. The barriers will be fitted with skirts to fence off the railway from users when lowered. The barriers will be fitted with galvanized guards/cages to shield moving parts of the barrier weights from users.
- 3.11 New RTLS will be provided in each corner of the level crossing facing along the road approach with 'keep crossing clear' signage attached to the same post. Audible warning devices are to be affixed to each RTLS to provide audible warning to pedestrians. Fitment to each RTLS allows or more localised sound output as the volume can be adjusted. An example of the proposed arrangement is shown below in **Figure 5**.



Figure 5: An Example of Proposed Level Crossing Barrier UP Photograph

- 3.12 MCB-CCTV level crossings are provided with CCTV cameras which provide a live image of the level crossing area to the signaller at the controlling signal box. The cameras are mounted as a single pair, normally on a single 'I' beam type flange mounted post which is 6m high. The CCTV camera post is proposed in the southwest corner. In order for a clear image to be provided to the signaller during low light conditions, lighting is required at the level crossing, 2 folding lighting columns are proposed, one in the southeast corner and one in the northwest. Each will carry 2 luminaires and will be fitted with shrouds/cowls to direct light where required and mitigate against disturbance to neighbouring properties and ecological habitat.
- 3.13 Equipment will be provided inside the railway fence line in the southwest corner for the operator to locally control the level crossing. Railway and level crossing control equipment will be housed in a new Smart IO (SMIO) housing building in the southwest corner. The building will be painted green in

colour to reduce visual impact. Parking for on-site attendance for railway staff will be provided to the rear of the equipment building and will be accessed from the public highway via a recessed gate. An example of the SMIO building is shown below in **Figure 6**.



Figure 6 - Examples of SMIO Housing Buildings

3.14 Examples of SMIO housing foundations and associated surrounding cable troughing is shown below in **Figure 7**.



Figure 7 - Examples of SMIO Housing Bases plus surrounding landscape features and cable troughing

- 3.15 Rubber pyramid type trespass guards will be provided across the railway between the barriers for a minimum distance of 2.6m from the crossing surface as a deterrent against trespass.
- 3.16 The carriageway will be approximately 5.7m wide to match the carriageway on the immediate approaches.
- 3.17 Road markings commensurate with the road and level crossing type will be marked over the railway and on each immediate approach. Footways of 1.5m in width are to extend for the length of the crossing area on both sides of the road and are to adjoin the exiting approach footways where present.
- 3.18 Fencing at the site will consist of 1.4m high white metal palisade fence around the level crossing with grey 1.4m high weldmesh fence within the barriers.

- 3.19 The station access in the northwest corner will be diverted and remodelled with accessible ramps within the railway boundary which will require removal of trees in that area.
- 3.20 As part of the wider project and not within this planning application, existing signage will be renewed with advanced warning signs on the left-hand side of the road to provide advanced warning to vehicles of the level crossing. This will replace the existing signage and is designed to reflect the existing road approach speed and local illumination requirements. The warning sign assembly on the left-hand side of the road to warn drivers of the overhead line electrification and details of a 'safe-height' will be renewed. For a period of 3 months after commissioning the new level crossing, a sign stating 'new level crossing control ahead' will be provided to notify users of the conversion.
- 3.21 The designs for the level crossing works will be in accordance with Network Rail Standards.
- All works are to be undertaken with minimal disruption to members of the public, local business, passengers, NR & train operator operations and infrastructure whilst the railway remains operational (except for any possessions or other exceptional and pre-agreed circumstances).
 - The proposed works are currently programmed to commence in Mid-2023.
 - The proposed construction compound will be situated adjacent to the application site and is therefore permitted under Part 4 Class A (temporary buildings and structures).
- 3.22 For more information in relation to the proposed works please refer to the supporting documents, plans and drawings that have been submitted as part of this planning application.

4. Policy Framework

- 4.1 This section of the planning statement summarises the relevant planning policy context within which the planning application will be determined.
- 4.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that proposals are determined in accordance with the Development Plan, unless material considerations indicate otherwise.

National Planning Policy and Guidance

- 4.3 The revised National Planning Policy Framework (NPPF) was published on 20th July 2021 which sets out the Government's economic, environmental and social planning policies. The NPPF outlines a presumption in favour of sustainable development as being at the heart of the planning system.
- 4.4 The National Planning Policy Guidance (NPPG) is a web-based resource that was last updated in June 2021 and provides information and guidance on planning. The NPPF and NPPG form material considerations in the determination of a planning application.

Development Plan

- 4.5 The relevant Development Plan for South Cambridgeshire District Council currently comprises the following:
- South Cambridgeshire Local Development Plan (adopted September 2018);
 - The Northstowe Area Action Plan (adopted 2007) (excluding Policy NS/3 (1g);
 - Cambridge Southern Fringe Area Action Plan (adopted 2008); and
 - Cambridgeshire and Peterborough Minerals and Waste Local Plan (2021).

Supplementary Planning Documents

- 4.6 In addition, South Cambridgeshire has published a range of Supplementary Planning Documents (SPDs). The SPDs of particular relevance to this application include:
- Cambridgeshire Flood and Water SPD (November 2016);
 - Greater Cambridge Sustainable Design and Construction SPD (January 2020); and
 - Greater Cambridge Biodiversity SPD (February 2022).

Site Designations

- 4.7 The Site is not allocated for development in the adopted Local Plan but is covered by the following designation on SCDC's adopted Policies Map:
- Shepreth Village – Development Framework – Policy S/7 (eastern corner of the site).

Emerging Policy Context

- 4.8 Cambridge City Council and South Cambridgeshire District Council are working together to prepare a new Local Plan – Greater Cambridge Local Plan. The Local Development Scheme (August 2022) indicates that the Draft Plan consultation (Regulation 18) will take place in Autumn 2023, the Proposed Submission Local Plan consultation (Reg 19) is expected in Autumn 2024 and submission to the Secretary of State for Independent Examination is scheduled for Summer/Autumn 2025.

Level Crossing Policy

- 4.9 Network Rail operates the rail network and infrastructure in the UK under licence from the Office of Rail and Road (ORR). It is the duty of Network Rail to operate a safe and reliable railway, as well as meeting our statutory and contractual obligations. Network Rail's primary role as statutory undertaker for the railway is to maintain and upgrade every aspect of railway infrastructure.
- 4.10 Network Rail has introduced robust policy to guide and improve its management of level crossings. The policy aims to reduce risk at level crossings, reduce the number and types of level crossings, ensure level crossings are fit for purpose, ensure Network Rail works with users and stakeholders and supports enforcement initiatives.
- 4.11 The ORR has a robust policy in terms of level crossing safety. The ORR's public website (<https://www.orr.gov.uk/guidance-compliance/rail/health-safety/level-crossings>) contains a vast amount of detail in relation to level crossings.
- 4.12 The Health and Safety at Work Act 1974 together with Network Rail's and the ORR's policy and guidance detailed within the '*Legal Framework for Level Crossings*' section within their website above clearly demonstrates the safety risk associated to level crossings and Network Rail's responsibility to ensure that they are operated, maintained and renewed to an appropriate standard.
- 4.13 The ORR specifically explains that where level crossings are being renewed or altered every effort should be made to improve the crossing and reduce risk. Network Rail's proposed upgrade of Meldreth Level Crossing is not only in keeping with relevant law and policy but is required by both law and policy.
- 4.14 As infrastructure manager, Network Rail must ensure that level crossings operate correctly and are safe to use. Network Rail is fulfilling its role as infrastructure manager by upgrading Meldreth Level Crossing and providing a barrier(s) arrangement.

5. Planning Assessment

5.1 This section assesses the Proposed Development against relevant national, strategic, and local policies. It considers the following key planning considerations in turn:

- Principle of Development;
- Design;
- Transport, Access and Servicing; and
- Environmental/Technical Considerations.

Principle of Development

5.2 Paragraph 8 of the NPPF states that achieving sustainable development means that the planning system has three overarching objectives (economic, social and environmental), which are interdependent and need to be pursued in mutually supportive ways. Part a) notes part of the economic objective is to identify and coordinate the provision of infrastructure.

5.3 From a strategic perspective, Adopted, Policy S/2 (Objectives of the Local Plan) outlines the broad vision for which the Local Plan seeks to deliver, Part f. stating that one of the key objectives of the Local Plan is to "*maximised potential for journeys, to be undertaken by sustainable modes of transport including walking, cycling, bus and train.*"

5.4 Adopted Policy S/7 (Development Frameworks) states that development and redevelopment of unallocated land and buildings within development frameworks (as shown on the Policies Map) will be permitted provided that:

a. Development is of a scale, density and character appropriate to the location, and is consistent with other policies in the Local Plan; and

b. Retention of the site in its present state does not form an essential part of the local character, and development would protect and enhance local features of green space, landscape, ecological or historic importance; and

c. There is the necessary infrastructure capacity to support the development.

5.5 The proposed upgrade works provide vital improvements to the safety, reliability and efficiency of the railway infrastructure in the region, ensuring sustainable transport options remain well maintained and managed. The upgrade works and associated infrastructure are required to be located within close proximity to the rail infrastructure which they serve, the proposed infrastructure updates is similarly required to be located adjacent the level crossing.

5.6 These works are necessary infrastructure improvements, the principle of development is therefore considered to be acceptable in policy terms.

Design

5.7 Policy HQ/1 requires all new development to be of high-quality design, with a clear vision as to the positive contribution the development will make to its local and wider context. The policy also provides a list of 15 design principles which includes preserving or enhancing the character of the

local urban and rural area and responding to its context in the wider landscape, being compatible with its location and appropriate in terms of scale, density, mass, form, siting, design, proportion, materials, texture and colour in relation to the surrounding area and include high quality landscaping and public spaces that integrate the development with its surroundings.

- 5.8 The proposed upgrades to the level crossing are of a contextually appropriate high-quality design that utilises the Network Rail standards to assist in ensuring the infrastructure integrates with the surrounding edge of settlement context of the development.
- 5.9 The surrounding hard and soft landscaping is non-intrusive in visual terms comprising gravel substrate and concrete pads which are required for the housing units installation and long-term access and maintenance requirements.
- 5.10 Railway and level crossing control equipment will be housed in a new SMIO modular building in the southwest corner. The building will be painted green in colour to reduce visual impact and the proposed equipment will be designed in accordance with similar structures built across Network Rail's infrastructure.
- 5.11 Given the high-quality design of the replacement level crossing and associated structures and integration with the surrounding landscape details, the proposed development is considered acceptable in policy terms.

Operational Transport, Access and Servicing

- 5.12 Paragraph 111 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.
- 5.13 Within this context, Paragraph 112 of the NPPF that development proposals should give first priority to pedestrian and cycle movements and to facilitate access to high quality public transport. Further, Paragraph 112 states development should address the needs of people with disabilities and create places that are safe, secure and attractive which minimises the scope for conflicts between pedestrians, cyclists and vehicles.
- 5.14 Policy TI/2 (Planning for Sustainable Travel) states that development must be located and designed to reduce the need to travel, particularly by car, and promote sustainable travel appropriate to its location. Paragraph 5 of this policy states that developers of 'larger developments' or where a proposal is likely to have 'significant transport implications' will be required to demonstrate they have maximised opportunities for sustainable travel and will make adequate provision to mitigate the likely impacts through provision of a Transport Assessment and Travel Plan. All other developments will be required to submit a Transport Statement.
- 5.15 The proposed development is for operational rail infrastructure and will include a new parking area which will be located to the west of the level crossing, which will allow parking for maintenance staff and be accessed/egressed in forward gear. The parking area will be utilised exclusively for operational purposes on an intermittent basis as required by Network Rail operatives.
- 5.16 To ensure the application is acceptable in highways terms, the application is accompanied by a Transport Assessment, prepared by Caneparo Associates. The Transport Assessment has been informed by baseline VISSIM modelling prepared by the Modelling Group which modelled potential highways impacts based on a 'Do Nothing' scenario which details surveyed existing conditions and a 'Do Something' scenario which models highway impacts post level crossing upgrade completion.

5.17 Traffic surveys were undertaken to confirm the current AM and PM peak traffic volumes through Meldreth Level Crossing which suggests there is on average slightly less than 1 vehicle per minute passing through the junction at AM and PM peaks:

Table 2.1: AM and PM Peak Flow – Meldreth				
Movement	Lights	Heavies	Cyclists	Total
<i>AM Peak (07:45-08:45)</i>				
Westbound	52	0	1	53
Eastbound	57	0	0	57
<i>PM Peak (16:45-17:45)</i>				
Westbound	59	0	1	60
Eastbound	51	1	2	54

5.18 Surveys of the existing Meldreth Level Crossing barrier down time confirmed the average downtime as 62 seconds. Upon installation, the average barrier downtimes will be extended to an average 169 seconds, which represents an average increase of 107 seconds.

5.19 The VISSIM modelling suggests that average delays across the entire highway network will equate to an additional 27.9 seconds in the AM peak and an additional 21.5 seconds in the PM peak:

Table 5.1: Network Performance						
Peak	Average Driver Delay (s)			Average Speed (mph)		
	DN	DS	Difference	DN	DS	Difference
AM	63.9	91.8	+27.9	16.7	13.9	-2.8
PM	50.8	72.3	+21.5	18.8	16.1	-2.6

Note: DN = Do Nothing. DS = Do Something.

5.20 The proposed barrier upgrades will have a minimal impact on eastbound journey times, with an approximate 65 second average delay to westbound traffic, which is not considered significant in highways terms. It should be noted that some vehicles would have longer delays if they arrive to the barrier as soon as it has been called, however other motorists may arrive just before the barrier lifts and therefore only a minimal delay. Details are included in the table below:

Table 5.2: Journey Times (s)				
Direction	Peak	DN	DS	Difference
EB	AM	46	48	+2
EB	PM	46	48	+2
WB	AM	47	112	+65
WB	PM	46	91	+46

Note: EB = Eastbound. WB = Westbound. DN = Do Nothing. DS = Do Something.

5.21 Further assessment has been undertaken in terms of queue length post completion. With the upgraded level crossing in place, the queue results show that there are modest increases in the average and maximum queue lengths. The highest increase is 52m, which is observed for the eastbound direction in the AM peak, which increases from an existing distance of 18m to 69m. This equates to approximately 9 vehicles, as shown within the figure below illustrating the additional queuing.



Construction Management and Traffic Movements

- 5.22 In accordance with good practice, a *Construction Management Plan*, prepared by Alstom has been submitted with this application.
- 5.23 Full details are set out within the document but details that construction will require 22 x weekday shifts (Mon-Sat) and 1 x night shift programme of works, including the requirement to deliver and install the SMIO during a single night shift to avoid any disruptions to the operational rail network service and to ensure safe operating conditions for operatives. The proposed programme and levels of construction traffic generation is set out below in **Table 1**:

Table 1 - Proposed Construction Programme

Week	Shift type	Description of works	Traffic movement
1	6x day shift	Site mobilisation Material load out Excavation of base & concrete blinding	1 x Hiab, 2 shifts 1 x Grab lorry, 2 shifts 1 x transit van/ 1 x welfare van, 6 shifts
2	7 x day shifts	Earth mats, Formwork and reinforcement	1 x transit van/ 1 x welfare van, 7 shifts
3	2 x day shift	Concrete to base Concrete to FSP bases	1 x concrete pump, 1 shift 1 x concrete lorries, 1 shift 1 x transit van/ 1 x welfare van, 2 shifts
4	7 x day shifts	Cable troughs and hardstanding area Site clean-up and demobilise from site	1 x concrete pump, 1 shift 1 x concrete lorries, 1 shift 1 x transit van/ 1 x welfare van, 2 shifts
5	1x night shift	Delivery of equipment housing	1 x 7.5ton lorry/ 1 x Hiab, 1 shift

- 5.24 Overall, the proposed upgrades will seek to improve the reliability and accuracy of the level crossing and provide safe access for all users of the site. The proposals will ensure the safe and efficient operation of the railway and will not result in any changes to the function of the highway network and are therefore acceptable in highway terms.

Environmental/Technical Considerations

- 5.25 This application is supported by a suite of environmental and technical reports which confirm that the proposed development is acceptable and will not result in any significant negative impacts and complies with local planning policy. We summarise the conclusions of these reports below. Please refer to supporting reports for further details.

Trees

- 5.26 Policy NH/6 (Green Infrastructure) states that the Council will aim to conserve and enhance green infrastructure within the district. Proposals that cause loss or harm to this network will not be permitted unless the need for and benefits of the development demonstrably and substantially outweigh any adverse impacts on the district's green infrastructure network.
- 5.27 Policy NH/7 (Ancient Woodlands and Veteran Trees) also outlines that planning permission will be refused for development resulting in the loss or deterioration of veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.
- 5.28 This application is accompanied by an Arboricultural Impact Assessment, prepared by RSK which describes the results of a survey of trees at Meldreth Level Crossing in August 2022. The Arboricultural Impact Assessment confirms that the proposed layout will require the removal of groups G2, and G3, both category C areas of emergent scrub on the southwestern side of the level crossing. The report concludes that the loss of these groups will not be of great detriment to the surroundings.
- 5.29 The upgrades to the transport infrastructure at Meldreth Level Crossing are essential to improve the signalling technology for the railway and will lead to better reliability and reduced maintenance on the wider network. As such, the proposals, including the removal of a small number Category C trees, is considered acceptable in policy terms.

Flood Risk

- 5.30 Policy CC/9 (Managing Flood Risk) seeks to minimise flood risk by only permitting development where it complies with the requirements as set out within the policy including the use of suitable flood protection and mitigation measures. The policy also requires the submission of site-specific Flood Risk Assessments (FRA).
- 5.31 A high-level Surface Water Strategy Statement, prepared by Alstom has been submitted in support of the application, which details how SMIO Housings will be constructed around a permeable gravel base, which ensures the proposed development will not lead to any localised or wider surface water flooding or impacts. This approach is considered to be in-line with the SuDS drainage hierarchy set out within the Cambridgeshire Flood and Water SPD and is therefore a suitable and acceptable design approach.
- 5.32 The Surface Water Strategy Statement identifies that due to the small surface areas of the equipment building roofs it is considered that infiltration into ground provides a suitable solution for the runoff. As such, the proposals, is considered acceptable in policy terms.

Biodiversity and Ecology

- 5.33 Paragraph 180 of the NPPF part c) states that development resulting in the loss of deterioration of irreplaceable habitats should be refused, unless there are wholly exceptional reasons⁶³ and suitable compensation strategy exists. Footnote 63 to Paragraph 180 states “*for example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat*”.
- 5.34 Policy NH/4 (Biodiversity) states that new development must aim to maintain, enhance, restore or add to biodiversity. Opportunities should be taken to achieve positive gain through the form and design of development.
- 5.35 This application is accompanied by a Preliminary Ecological Appraisal and Ecological Impact Assessment (EclA), prepared by RSK Biocensus. The accompanying reports, outline that the majority of this site consists of the existing level crossing and road, which was bordered either side by dense scrub. The scrub contained bramble, some young willow trees, ivy (*Hedera helix*) and butterfly-bush (*Buddleja davidii*). The scrub in the east also contained some beech (*Fagus sylvatica*) and conifer trees.
- 5.36 The EclA considers potential direct and indirect effects upon: L-Moor, Shepreth SSSI (150 m south-west), Barrington Pit SSSI (1.38 km north-west), and Melwood LNR (1.88 km SW) and impacts to surrounding habitats and protected species: great crested newt, reptile, nesting birds, foraging and commuting bats and notable mammals such as badger, otter and hedgehogs. The site also falls within the SSSI Impact Risk Zone (IRZ) for L-Moor, Shepreth SSSI.
- 5.37 In terms of potential impacts to statutory designated sites listed above, the EclA concludes at para 5.2.1-5.2.3:

5.2.1 - L-Moor, Shepreth SSSI is located 150 m south-west from Meldreth Road LX, this site is designated for its flora and invertebrate assemblage. The barrier at Meldreth Road will be replaced by a full barrier, which will result in a slightly longer downtime of the barrier and therefore queuing traffic. This is likely to lead to an increase in air pollutants (nitrous oxide and sulphur dioxide) from traffic at the LX location.

5.2.2 - Information from the air pollution information website (www.apis.ac.uk) indicates that the L-Moor, Shepreth SSSI is vulnerable to nitrogen and sulphur deposition. A vehicle traffic performance report (Modelling Group, 2022) however was produced for Meldreth LX. With the upgraded level crossing in place, the vehicle queue results show that there are modest increases in the average and maximum queue lengths. The highest increase is 52m, which is observed for the westbound direction in the morning peak time. This equates to approximately 9 vehicles. The network performance table shows that the average delay will not exceed 1 minute which indicates no significant impact on the network. There is no latent demand which demonstrates that all traffic can enter the network. Therefore, as the increase in traffic will be minor, temporary and only occur during certain times of the day (rush hour), and any pollution likely to be deposited quite close to the source of emission so it is anticipated that the increase in air pollutants is over and above the existing baseline of background pollutants is negligible, and no significant likely effects are anticipated for this SSSI.

5.2.3 - The remaining statutory sites are located in excess of 1.38 km of the LX. As the works are relatively small scale and there are no direct impact pathways linking the LX to these statutory sites, no impacts are anticipated to these statutory sites as a result of the proposed works.”

- 5.38 In terms of potential impacts to protected species or habitat within the site, the EclA concludes that the proposal subject to various mitigation measures outlined within Section 5 of the EclA being

implemented this should provide for no residual effects on reptiles, nesting birds, bats and notable mammals following the completion of the development. Mitigation measures include pollution prevention measures, appropriate site clearance methods with suitable timing, establishment of exclusion zones to safeguard protected species and/or habitats and sensitive lighting mitigation for bat foraging and commuting.

5.39 New lighting will be installed at Meldreth Road for the operation phase of the level crossing. The site contains high value foraging and commuting habitats in the form of scrub, which is connected to suitable habitat in the surrounding landscape. A Lighting Assessment, prepared by Alstom has been submitted with this application to provide further details on the proposed lighting which utilises luminaires mounted on Abacus high root mounted, heavy duty, raise/lower, columns. This will allow the Network Rail lighting requirements for both vertical and horizontal illuminance to be met. The Assessment addresses potential light spill for species or pedestrians and vehicles in accordance with current Standards and Operational Requirements to ensure the safe operation of the level crossing. Several options were considered to reduce the light spill from the new lighting. As sensory timers cannot be used, it has been agreed by Alstom that the new lighting will be fitted with shrouds/cowls to reduce light spill. However, a vertical and horizontal light spill assessment has yet to be completed of the effects shrouds/cowls will have. Assuming the vertical light spill does not extend beyond 5 m and less than 1 lux level above 5 m no residual likely significant effects are anticipated for foraging and commuting bats. However, this will need to be confirmed by an updated lighting assessment pending further detailed design that will be confirmed during determination or secured by condition.

5.40 A biodiversity net gain/loss (BNG) assessment was also made for the proposed works. In terms of baseline position, it is estimated the site currently comprises a baseline of 0.53 Biodiversity Units, meaning to achieve a 10% biodiversity net gain, would require a total of an estimated 0.59 Biodiversity Units:

UK Hab Primary	Area – Ha	Condition	Baseline Biodiversity Units - BU
Other neutral grassland (g3c)	0.106399	Fairly poor	0.27
Dense scrub (h3)	0.066110	Poor	0.26
Developed land, sealed and unsealed surface	0.44708	N/A	0.00
Total	0.217217	-	0.53

5.41 At present there is no ability to for habitat enhancement or creation within any of the level crossing sites post works given the limited land available. The EclA provides an estimate of the BU required to achieve 10% net gain project wide for all level crossing applications within Cambridgeshire. However, it should be noted to satisfy the Defra 3.0 metric trading rules habitat created will need to have a distinctiveness of equal or greater value than the baseline habitats. The applicant will seek to agree appropriate off-site biodiversity enhancement in consultation with the LPA during determination of the application.

5.42 The recommended ecology mitigation measures have also been specified in the site-specific *Construction Management Plan (CMP)*, prepared by Alstom, which has been submitted in support of this application, which stipulates that in accordance with the PEA/EclA recommendations, during the construction period, the following mitigation measures will be implemented to ensure any potential impacts to the local environment are avoided:

- *Cautious approaches to vegetation clearance*

- *Avoiding aiming any temporary lighting towards trees*
- *Covering excavations at night/ capping pipework with a diameter greater than 120mm*
- *Keeping vegetation cut short throughout the duration of the works.*
- *Cautionary measures to be put in place to avoid potentially polluting nearby water course*
- *While the report concluded that there were no suitable trees or buildings on site for roosting bats, bats may utilise the wider landscape for foraging and commuting. As a precaution the design team will work with the supplier during the detailed design stage to develop the use of a shroud to install onto the column to limit light spill and implement a practicable solution.*

5.43 Subject to the proposed mitigation measures being implemented as set out within the EclA and CMP, and suitable off-site biodiversity enhancement measures being implemented, it is considered the proposed works would have negligible impact on local ecology and the proposals are therefore acceptable in policy terms.

Historic Environment

5.44 NPPF Paragraph 199 states when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance. Development which results in substantial harm (or total loss) of a designated heritage asset, permission should be refused (Para 201), and where the proposed development would lead to less than substantial harm, the harm should be weighed against the public benefits of the proposed development.

5.45 Policy NH/14 (Heritage Assets) states that development proposals will be supported when they sustain and enhance the significance of heritage assets, including their settings, as appropriate to their significance and in accordance with the National Planning Policy Framework, particularly, amongst protected assets, scheduled monuments.

5.46 The level crossing is located near the Moated site 170m south west of Tyrell's Hall Scheduled Monument (SM) approx. 500m to the south-east of the level crossing. The closest listed building (Barns at Number 19 Rose Cottage Grade II) is located approx. 400m to the north-east. Given the distance between the locations, and the existing level crossing on the site, the proposed development would not result in any impacts or harm to the character or setting of the SM or listed building.

5.47 Given no harm would be generated on the character or setting of the SM or listed building, the proposed development is considered acceptable in policy terms.

Sustainability

5.48 Policy CC/1 states that planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation and adaptation into the development. Applicants must submit a Sustainability Statement to demonstrate how these principles have been embedded into the development proposal. The level of information provided in the Sustainability Statement should be proportionate to the scale and nature of the proposed development.

5.49 A project wide *Sustainability Statement*, prepared by Alstom has been submitted alongside this application, outlining the various sustainability initiatives that have been integrated within the project

across the various level crossing sites. This has been developed in accordance with the *Greater Cambridge Sustainable Design and Construction SPD (2020)*.

- 5.50 In accordance with the Council's Sustainable Design and Construction Supplementary Planning Document (adopted January 2020), a Sustainability checklist for applications in South Cambridgeshire is provided at Section 6 of the Sustainability Statement. The Sustainability Checklist includes summaries of sustainable approaches where applicable.
- 5.51 Furthermore, a project wide *Carbon Assessment* has been prepared by Alstom to assess the carbon impact associated with the entire C3R project. The Carbon Assessment confirms that the overall capital carbon footprint of the design using *conventional* concrete products is estimated to be in the region of 153 tonnes of CO2 equivalent across the entire project. Based on the review of alternative and available low carbon products, the proposed methods of construction and materiality (across the entire C3R project) will allow for a further 45 tonnes of CO2 equivalent from the conventional baseline carbon footprint of the project.
- 5.52 The report confirms that carbon efficiency can be made through the provision Glass Granulated Blast Furnace Slag (nominal 65% used) into the concrete mix of substructure elements. It also notes that GRP or recycled plastic troughing also has a major role to play in reducing the carbon on the C3R project. Further savings around signal installation using screw piling over concrete and introducing innovation such as TechnoCrete and Macrebur are also being considered for other construction elements of the project and will be implemented where feasible allowing for further CO2 reductions.

6. Conclusion

- 6.1 The proposed works to upgrade Meldreth Level Crossing are considered to be acceptable in the context of the modernisation of level crossing control and the associated safety, efficiency and reliability. The works are an important component of the overall C3R project which will modernise rail infrastructure across Cambridgeshire.
- 6.2 The proposed works are necessary to allow Network Rail to fulfil its role and remit as infrastructure manager by upgrading this signalling equipment and ensuring its supporting infrastructure is fit for purpose. By undertaking the proposed works, this will create a safer and more efficient operation and there will be wider community benefits as a result of the proposal. These include the upgrading of necessary infrastructure for the rail network, introducing more appropriate and advanced modern technology and improvements to safety requirements and reliability of the railway.
- 6.3 Network Rail's proposed upgrade of Meldreth Level Crossing is not only in keeping with relevant law and policy but is required by both law and policy. The Health and Safety at Work Act 1974, level crossing policy and guidance detailed within this statement clearly demonstrates the safety risk associated to level crossings and Network Rail's responsibility to ensure that they are operated, maintained and renewed to an appropriate standard.
- 6.4 To conclude, the development proposals represent a high-quality, well-designed scheme that accords with the principles of sustainable development and should be approved in accordance with the presumption in favour of sustainable development and the approach to decision-making set out in paragraphs 10 - 11 of the NPPF.

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