

**Application by Thurrock Power Ltd for an Order granting Development Consent for Thurrock Flexible Generation Plant Project**

**Written Representation submitted on behalf of Network Rail Infrastructure Limited**

**Planning Inspectorate Reference No: EN010092**

**1 Introduction**

- 1.1 This written representation (**Written Representation**) is submitted on behalf of Network Rail Infrastructure Limited (**Network Rail**) in response to the application by Thurrock Power Ltd (**Applicant**) for the Thurrock Flexible Generation Plant Development Consent Order (**Proposed DCO**). Network Rail submitted its section 56 representation (Examination Library Reference No. RR-015) on 17 August 2020.
- 1.2 The Proposed DCO seeks development consent for the construction and operation of gas reciprocating engines with up to 600MW electrical capacity and battery storage with up to 150MW electrical capacity as specifically detailed in Schedule 1 of the Proposed DCO (**Proposed Development**).
- 1.3 Network Rail owns, operates and maintains the railway infrastructure of Great Britain. It does so pursuant to a network licence granted under section 8 of the Railways Act 1993 (**Network Licence**). A key element of Network Rail's statutory undertaking and a condition under the Network Licence is to ensure the safety of the railway and those using and/or operating it. The Proposed Development would be located to the east and south-east of the London, Tilbury and Southend railway line (**Railway Line**). The relevant section of the Railway Line affected by the Proposed Development has a line speed of 70 miles per hour for passenger trains and 50 miles per hour for freight trains and is used by approximately 136 trains per day including passenger traffic.
- 1.4 Network Rail considers that the Proposed Development will have significant impacts on a number of level crossings (shown marked on the plan attached to this Written Representation at Appendix 1):
- (a) Low Street level crossing (shown marked as TLL 24.10 M.Chns);
  - (b) East Tilbury level crossing (shown marked as TLL 25.12 M.Chns);
  - (c) No. 168 level crossing (shown marked as TLL 24.02 M.Chns); and
  - (d) Walton Common level crossing (shown marked as TLL 23.40 M.Chns)
- (together referred to as the **Crossings**). Please note that the level crossing shown marked as TLL 24.43 M.Chns on the plan attached at Appendix 1 is not affected by the Proposed Development.
- 1.5 Network Rail does not object in principle to the Proposed Development. However, Network Rail objects to the Proposed DCO and the Proposed Development as:
- (a) In Network Rail's opinion the increased number of HGVs and other vehicles using the Low Street level crossing significantly increase its risk profile;

- (b) The location of the proposed service road junction is unacceptably close to the Low Street level crossing and would increase the risk of vehicles blocking back over the level crossing;
- (c) Network Rail requires permanent and formal access rights over the proposed access road located in zone C of the Proposed Development in order to access Walton Common level crossing for inspection and maintenance;
- (d) Network Rail are concerned that lights from construction traffic turning into and out of the proposed service road could dazzle train drivers;
- (e) The proposed location of the gas pipeline, water pipeline and access road are too close to the Railway Line and will adversely impact on the Railway Line unless mitigation measures are put in place;
- (f) Network Rail has no control over the construction methods used for the gas pipeline, water pipeline and access road proposed to be installed alongside the Railway Line and their impact on the Railway Line; and
- (g) There is no requirement in the Proposed DCO requiring the Applicant to inform Network Rail that it intends to cross over the Low Street level crossing with abnormal indivisible loads (AILs).

1.6 In order to be able to withdraw its objection, Network Rail will need to be confident that sufficient mitigation measures will be agreed and implemented to ensure that traffic travelling to and from the Proposed Development and the other works proposed within the vicinity of the Railway Line will not impact the safety of the Railway Line or the Crossings and those using and/or operating them. To achieve this the following will need to be in place:

- (a) appropriate protective provisions in the Proposed DCO that protect and safeguard Network Rail's statutory undertaking;
- (b) amendments to the requirements in the Proposed DCO to regulate the use and maintenance of the Crossings; and
- (c) amendments to the Proposed DCO to facilitate the mitigation measures required to protect and safeguard Network Rail's assets and the users of the Railway Line; and
- (d) an agreement with the Applicant that regulates the use of the Crossings and the carrying out of all necessary mitigation measures to protect and safeguard the Railway Line.

1.7 Network Rail therefore requests that the bespoke protective provisions for the benefit of the safety of railway interests which are at Appendix 2 to this Written Representation (**NR Protective Provisions**) are included in the Proposed DCO, and that the NR Requirement Amendments, as defined and detailed at paragraph 8 below and in Appendix 3 to this Written Representation, are made to the Proposed DCO.

1.8 Unless the NR Protective Provisions and the NR Requirement Amendments (further details of which are set out at paragraphs 7 and 8 and below) are included in the DCO, Network Rail considers that the Secretary of State cannot conclude that the Proposed DCO can be granted without serious detriment to Network Rail's statutory undertaking and serious risk to users and operators of the Railway Line arising.

- 1.9 Network Rail and the Applicant are engaging in detailed discussions regarding the points of objection to the Proposed DCO and the resolution of Network Rail's concerns. Network Rail is hopeful an agreement with the Applicant can be reached. However, in the absence of an agreement, Network Rail, as an interested party, seeks to be heard at the compulsory acquisition hearing and at any further issue specific hearings on the Proposed DCO and respectfully makes the requests set out above and detailed at paragraph 8 below.

## 2 Impacts on Level Crossings

### Low Street Level Crossing and East Tilbury Level Crossing

- 2.1 The Proposed DCO seeks to designate routes along existing roads by which vehicles will gain access to and from the Proposed Development during both the construction and operational phases. Network Rail are concerned with three routes:
- (a) The ordinary designated route via Coopers Shaw Road / Church Road / Station Road (via the Low Street level crossing) to be used during the construction and operational phases by six staff vehicles per shift per day with occasional HGV access, increasing to 20 two-way vehicle movements per day during maintenance periods (**Designated Route**);
  - (b) The extraordinary route via Coopers Shaw Road / Church Road / Station Road (via the Low Street level crossing) to be used where the usual route via Fort Road was unavailable by 83 two-way daily HGV movements and 170 two-way daily non-HGV vehicle movements (**Extraordinary Route**); and
  - (c) The diversionary route via East Tilbury level crossing to be used during the construction of the gas pipeline which necessitates the partial closure of Station Road for a 2-3 day period (**Diversiónary Route**).
- 2.2 The Designated Route and the Extraordinary Route are set out in the in outline construction traffic management plan (Examination Library Reference No. APP-144) and the outline construction worker travel plan (Examination Library Reference No. APP-145) (**Construction Traffic Management Plan** and **Construction Worker Travel Plan**) and referred to in the transport assessment (Examination Library Reference No. APP-095) (**Transport Assessment**). The Diversiónary Route is referred to in the Transport Assessment but the route is not set out.
- 2.3 Network Rail considers that the Applicant's assessments of the current HGV usage of Station Road is not accurate. The Applicant estimates the number of vehicles that utilise Low Street level crossing in a 24 hour period as being 190 two-way daily HGV movements.<sup>1</sup> However, as this data was taken from surveys undertaken in 2017 and the most recent census at the level crossing from January 2020 records a daily average of 239 two-way daily HGV movements. The recent closure of Low Street Lane has also added to the number of HGVs utilising the Low Street level crossing which have not been accounted for in the 2020 survey. The Diversiónary Route therefore does not accurately account for the existing heavy vehicular use of the Low Street level crossing.
- 2.4 Network Rail considers that the Extraordinary Route would result in a sudden and significant increase in the number of vehicles using the Low Street level crossing. which would significantly increase its risk profile Based on the Applicant's figures, as a result of the Extraordinary Route, traffic movements over the Low Street level crossing would increase on average by 30.86% for

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<sup>1</sup> Transport Assessment: Table 2.2

HGVs and a total 14.95% for all vehicles during the average construction period and 61.04% for HGVs and a total 25.15% for all vehicles during peak construction.<sup>2</sup>

- 2.5 Network Rail is concerned that the Diversionary Route would result in a sudden and significant increase in the number of vehicles passing over East Tilbury level crossing. Based on the Applicant's figures, there could be a maximum of 530 additional movements over the level crossing when the Diversionary Route is in place (made up of the 500 light vehicles on Station Road and the 30 HGVs using Station Road to access the Ingrebourne Valley / Goshem's farm site). The Proposed DCO application documents also make no reference to an alternative route for traffic should Low Street level crossing be closed for any reason. Network Rail is concerned about what would happen to the current flow of traffic in this scenario and whether it would be rerouted via East Tilbury level crossing.
- 2.6 The Construction Traffic Management Plan and the Construction Worker Travel Plan do not limit the number of HGVs using Low Street level crossing and East Tilbury level crossing and do not provide a mechanisms to re-evaluate the safety of the Low Street level crossing and the East Tilbury level crossing should there be an increase in vehicle numbers beyond those detailed in the Transport Assessment. The Proposed DCO also does not contain a notification procedure through which the Applicant requests to cross the Low Street level crossing with AILs, which the Applicant has acknowledged is possible. Network Rail therefore requests that is consulted on and has approval of the final versions of the Construction Traffic Management Plan and the Construction Worker Travel Plan, which must include a notification procedure for the passing of AILs over the Low Street level crossing
- 2.7 The Station Road approach to the Low Street level crossing has a number of characteristics that increase the risk profile of the level crossing. The curvature of Station Road and high hedges makes it difficult for approaching drivers to see traffic queuing at the level crossing and the high speed limit of 50mph reduces the time available to brake if there are any obstructions on the road. Whilst Low Street level crossing already has CCTV protection, the highest level of protection available at a level crossing, there have already been a number of incidents of barrier strikes recorded at the level crossing and skid marks on the road indicating that vehicles currently swerve at speed to avoid obstacles in the road. The closure of Low Street Lane has also led to a significant increase in the HGV traffic over Low Street level crossing increasing the potential for further queuing around the Low Street level crossing. Accordingly, any proposal to increase usage of this already busy route requires mitigation to the approaches which are outside the control of Network Rail.
- 2.8 Network Rail has conducted an 'all level crossing risk model' (ALCRM) assessment for the Low Street level crossing to demonstrate the level of risk associated with it. In summary, the ALCRM assessments demonstrates the current risk level (which is based on the baseline traffic survey data from the Network Rail 2020 census for Low Street level crossing) and compares this to where a package of mitigation measures are put in place to determine the reduction in risk present at the Low Street level crossing,<sup>3</sup> The ALCRM assessments also incorporate a range of other parameters to assess risks to the users of the railway (including level crossings) and railway vehicles, such as volume of traffic, speed of road, type of freight line, frequency of

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<sup>2</sup> Environmental Statement: Chapter 10 (Traffic and Transport), Table 4.1 and Table 4.2

<sup>3</sup> ALCRM uses baseline traffic survey data as part of its analysis. If there is no baseline traffic data in the system (usually a 9-day traffic survey), the Level Crossing manager (LCM) will undertake a 1-hour survey. This is carried out between the hours of 09:30 and 15:30 to avoid peak traffic flows and thus minimises the skewing of any data. The collected survey data is then input into ALCRM, along with information such as time gathered etc. ALCRM then uses algorithms to extrapolate this into the wider parameters required to assess the risk. Here a 30-minute census survey was conducted for Marsh Lane level crossing and a 1-hour census survey was conducted for Kiln Lane level crossing

railway movements, speed of line, etc. The model also facilitates cost-benefit analysis for new operation scenarios, mitigation measures and upgrades.

- 2.9 The results produce a fatalities and weighted injuries (FWI) index score which measures safety performance. The index collates all non-fatal injuries that have occurred over the previous 12 months normalised per 100,000 worker hours using a weighting factor to produce a total number of 'fatality equivalents'. For example, 10 major injuries or 200 class 1 minor injuries or shock/trauma, or 1000 class 2 minor injuries or shock/trauma are taken as being 'statistically equivalent' to one fatality.
- 2.10 The results were as follows:
- (a) Current FWI score: 2.21E-04
  - (b) FWI score with mitigation measures in place: 1.88E-04 (as set out in Appendix 5).
- 2.11 The works proposed by Network Rail would result in a 15% reduction in risk at the Low Street level crossing. Therefore Network Rail proposes the following works are carried out in relation to the roads approaching the Low Street level crossing:
- (a) a vehicle activated sign on the down approach of Station Road towards the level crossing, to alert vehicles of the presence of the level crossing and the need to reduce speed;
  - (b) red light enforcement cameras to detect vehicles failing to stop;
  - (c) larger yellow-backed signs to replace existing traffic signs;
  - (d) hedge removal on Station Road (to the north of Low Street level crossing) to allow drivers to see through the curve to the crossing;
  - (e) rumble strips and anti-skid surfacing to encourage drivers to slow down or mitigate against skidding; and
  - (f) a reduction in the road speed from 50mph to 20mph from the junction of Cooper Shaw Road and Church Road to 600 metres south east of the Low Street level crossing.
- 2.12 Given that Station Road is public highway and Network Rail would not be able to carry out these works itself, Network Rail therefore requests that the Applicant amends the scope of the Proposed Development works or seeks additional to make provision for the road improvement works to the approach to Low Street level crossing or enters into an agreement with the highways authority.

### **Walton Common level crossing**

- 2.13 Walton Common level crossing (marked as TLL 23.40 M.Chns on the plan attached at Appendix 1) is a private level crossing. It is accessed by gates fixed to fencing bordering the Railway Line. Network Rail note that there have been issues with trespassers chopping down telegraph poles supporting overhead line warning bells at this level crossing as well as removing the gates in order to take quad bikes across the level crossing.
- 2.14 Network Rail is concerned that the proposed location of the exchange common land would facilitate and encourage public access to this area and increase the risk of additional trespass on the Railway Line.

- 2.15 Network Rail therefore requests that the Applicant amend the scope of Work no. 4 of the Proposed DCO to include upgrades to the fencing between the exchange common land and the Railway Line and upgrades to the Walton Common level crossing gates to discourage trespass on the Railway Line.

### **No. 168 level crossing**

- 2.16 No. 168 level crossing (marked as TLL 24.02 M.Chns on the plan attached at Appendix 1) is a private level crossing. Under the Proposed DCO, the land by which the No. 168 level crossing can be access will be compulsorily acquired meaning that access to the No. 168 level crossing will no longer be possible. Given that the level crossing is not actively used by the current landowners and the presence of the Low Street level crossing (which is publically accessible) slightly further down the line, Network Rail therefore requests that additional powers be added to the Proposed DCO to close the No. 168 level crossing, including provision for removal of the existing gates and upgrading the fencing along the Railway Line.

## **3 Proposed access road and junction**

- 3.1 The Applicant proposes to construct an access road (**Access Road**) from Station Road to the site of the Proposed Development. It is proposed that the Access Road will join Station Road 45 metres south-east from the stop-line of the Low Street level crossing. Network Rail considers that the location of the proposed junction of the Access Road is unacceptable from a safety and performance perspective as it could lead to additional congestion on Station Road at the approach to Low Street level crossing. Network Rail therefore requests Work no. 6 is amended so that the location of the junction is increased to 90 metres from the stop-line of the Low Street level crossing.
- 3.2 Network Rail is also concerned that the proposed location of the Access Road is too close to the Railway Line and considers further mitigation measures should be put in place to prevent vehicle incursions onto the track. This is particularly concerning given that the Extraordinary Route provides for the use of the Access Road by AILs if required, which pose a significant risk to the Railway Line and its users if an incursion occurred blocking the track leading to damage of assets, delays to railway services and costly repairs to rectify. To mitigate against these risks, Network Rail requests the Applicant assesses these risks and ensure that mitigation measures such as the installation of road vehicle incursion measures are fully considered and adopted as part of Work no. 6 of the Proposed DCO or that the position of the Access Road is moved further to the south-east, away from the Railway Line.
- 3.3 The construction methods used to construct the Access Road and the on-going use of the Access Road may also have the potential to alter the profile of the Railway Line by increasing vibrations and shifting the position of the track leading to damage to assets, delay to railway services and costs to rectify. Network Rail have requested further information from the Applicant on how it intends to construct the Access Road and the specifications for it, in order to ascertain whether further analysis, such as ground movement surveys, will need to be commissioned to ascertain the potential risks to the Railway Line and all other associated assets within the zone of influence from these works as well as any subsequent control measure that will need to be implemented prior to works commencing.
- 3.4 Network Rail are also concerned that the presence of vehicles on the Access Road, particularly when using the junction, will have an adverse impact on rail traffic. In particular, that lights present on such vehicles and other plant and equipment could be confused for signals by train drivers. Network Rail therefore request amendments to Work No. 6 of the Proposed DCO to introduce solid fencing to a height to shield the Railway Line from lighting.

#### **4 Walton Common level crossing closure**

- 4.1 Network Rail currently accesses Walton Common level crossing for inspection and maintenance via the agricultural track running parallel to the Railway Line, by way of an informal arrangement with the existing landowner. The track sits within land to be acquired under the Proposed DCO. Network Rail therefore requests that a formal easement be granted to it over the Access Road to permit permanent access to the Walton Common level crossing for inspection and maintenance. The ongoing maintenance of the access road should remain with the Applicant and this easement should equitably be provided for nil consideration.

#### **5 Pipeline works**

- 5.1 The Applicant proposes to construct a gas pipeline (**Gas Pipeline**) and a water pipeline (**Water Pipeline**) (together the **Pipelines**) in land adjacent to the Railway Line. The application documents indicate that the Pipelines are to run parallel and in close proximity to the Railway Line. Network Rail is concerned that the proposed position of the Pipelines could pose a risk to the Railway Line, should the Pipelines fail and lead to a leakage of gas or water.
- 5.2 Network Rail is also concerned about the impact of works for the construction of the Pipelines and the Access Road on the safe operation of the Railway Line as the types of construction method could result in changing the profile of the railway due to increased vibration. Network Rail also needs to ascertain whether the proposed connection point of the Water Pipeline to an existing water main adjacent to Station Road would adversely affect the Low Street level crossing and that existing drainage culverts running underneath the Railway Line would be maintained.
- 5.3 In order to ascertain the risks Network Rail require further information on the design criteria for the scheme that takes into account the railway, which includes offset horizontal and vertical distances from the closest railway assets, the construction methods and controls in place to avoid transferring risks onto the Railway Line and clarity of operational and maintenance requirements for their proposed installations.
- 5.4 In the absence of specific offset distances from Network Rail adjacent assets, Network Rail recommends that in the first instance, the Pipelines and Access Road are positioned outside and away from the 'zone of influence', being 3.0 metres across and a 45° line down and away from the closest Network Rail asset. This consideration would assist with removing significant risks but would need to be agreed by consultation with Network Rail under an asset protection agreement. Design information and construction methodology should also clearly demonstrate and substantially protect the Railway Line from the inadvertent influence of dust pollution, excessive vibration, undermining, settlement, surcharging, significant de-watering of surrounding soil and managing construction plant movements.
- 5.5 Network Rail therefore requests that an asset protection agreement be put in place to secure:
- (a) that no works shall be carried out without Network Rail's prior approval of the plans, specification, method statement and programme of works;
  - (b) full access rights, during both the construction and operation phases, are retained for the benefit of Network Rail to enable the carrying out of all necessary maintenance, repair, renewal, inspection and enhancement works;
  - (c) recovery of Network Rail's legal and professional fees, costs and disbursements incurred in connection with the proposals to carry out the works and any other costs

incurred by Network Rail arising out of the construction, operation and maintenance of the works; and

- (d) no work will be carried out unless and until all consents, licences, registrations and authorisations (including any statutory or regulatory consents) are in place.

## **6 Protective Provisions**

- 6.1 The protective provisions included within Part 6 of Schedule 9 to the Proposed DCO are not sufficient to protect the interests of Network Rail. The protective provisions were included in the Proposed DCO without any engagement with Network Rail or a proper understanding of the level of protection required by Network Rail.
- 6.2 Without the NR Protective Provisions, Network Rail has no control over the safe use of the Crossings, meaning that the detriment caused to the Crossings, and the safety of the railway users by the increased traffic related to the Proposed Development, cannot be made good by Network Rail without Network Rail allocating funds to carry out improvement works. A cost that should equitably be met by the Applicant. In addition, Network Rail has no control over proposed works that would affect the safety of the railway and its users.
- 6.3 Network Rail reserves its position, in both representations and submissions at hearings, to seek the necessary amendments to the proposed protective provisions to ensure the protective provisions adequately protect Network Rail's operational infrastructure affected by the Proposed Development.

## **7 Requests of the Examining Authority**

- 7.1 Network Rail will continue to engage with the Applicant however Network Rail invites the Examining Authority to request that the Applicant makes the following amendments to the Proposed DCO:
  - (a) The NR Protective Provisions replace the protective provisions included at Part 6 Schedule 9 to the Proposed DCO, as we refer to above (and as attached at Appendix 2);
  - (b) Requirement 4 (Detailed Design) of Schedule 2 of the Proposed DCO is amended to refer to the consultation with, and approval by Network Rail, of the design of the Proposed Development in so far as the details impact on operational railway (including the Crossings) (as shown on the attachment at Appendix 3);
  - (c) Requirement 6 (Construction Traffic Management Plan) of Schedule 2 of the Proposed DCO is amended to refer to the consultation with, and approval by Network Rail, of the Construction Traffic Management Plan in so far as the Plan addresses construction traffic affecting the operational railway (in particular at the Crossings) (as shown on the attachment at Appendix 3); and
  - (d) Requirement 7 (Construction Worker Travel Plan) of Schedule 2 of the Proposed DCO is amended to refer to the consultation with, and approval by Network Rail, of the Construction Worker Travel Plan in so far as the Plan addresses traffic affecting the operational railway (in particular at the Crossings) (as shown on the attachment at Appendix 3).

((b) – (d) together being the **NR Requirement Amendments**)



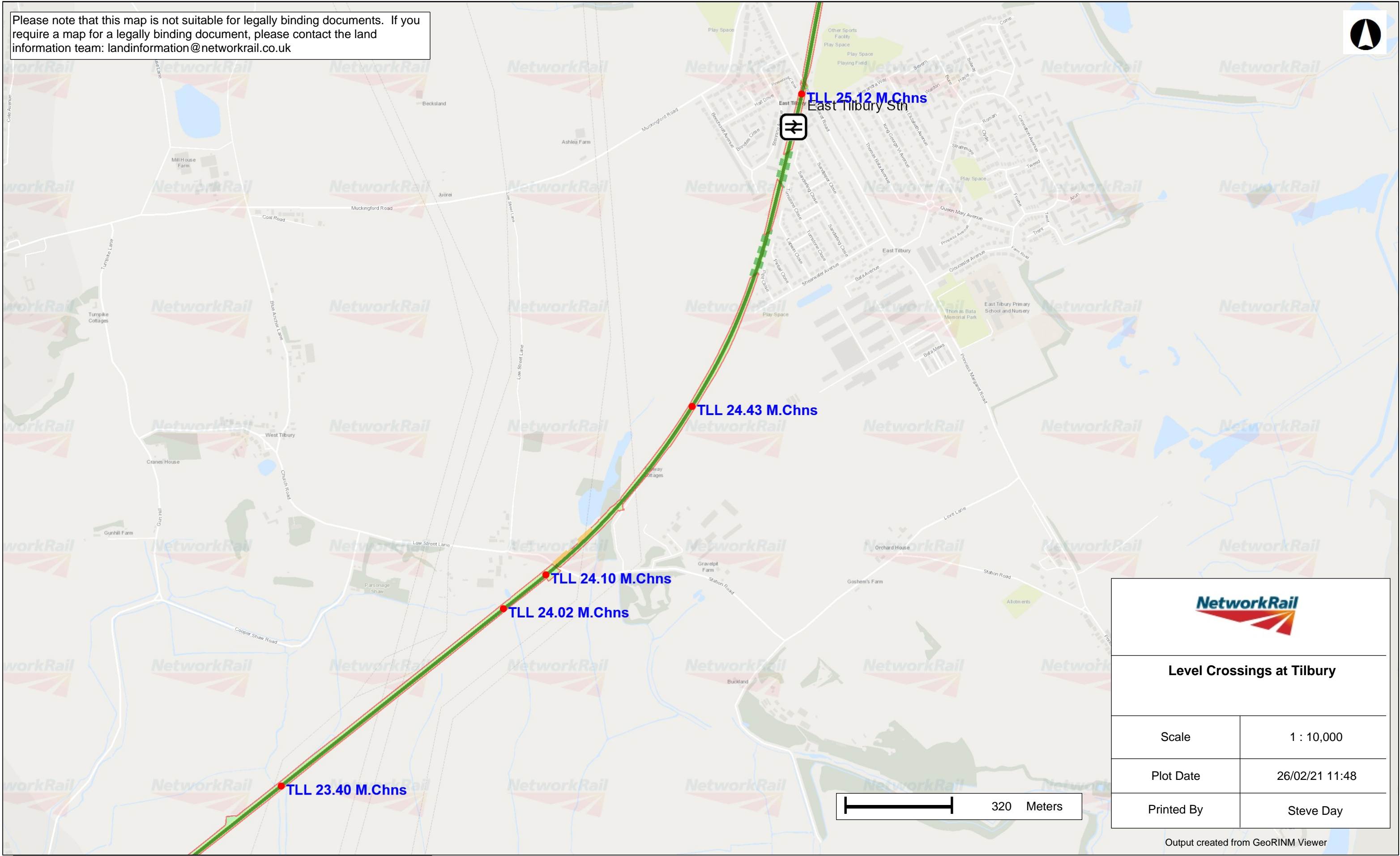
## **8 Conclusions**

- 8.1 Network Rail does not object in principle to the Proposed Development. However it strongly objects to the impact of the Proposed Development on the Crossings and the Railway Line. To mitigate this risk as far as is possible to do so, Network Rail considers it to be of the utmost important that the NR Protective Provisions and the NR Requirement Amendments are included in the Proposed DCO.
- 8.2 Network Rail respectfully requests that the Secretary of State, does not grant the Proposed DCO without the NR Protective Provisions and the NR Requirement Amendments being included in the Proposed DCO.
- 8.3 Network Rail is in discussions with the Applicant to enter into a voluntary agreement to secure appropriate mitigation measures but until such time as Network Rail is given the protection and assurances requested as detailed in this Written Representation, Network Rail's objection to the Proposed DCO will not be withdrawn.

**Addleshaw Goddard LLP      23 March 2021**

**Appendix 1**  
**Level Crossings Plan**

Please note that this map is not suitable for legally binding documents. If you require a map for a legally binding document, please contact the land information team: [landinformation@networkrail.co.uk](mailto:landinformation@networkrail.co.uk)



Level Crossings at Tilbury

Scale	1 : 10,000
Plot Date	26/02/21 11:48
Printed By	Steve Day

Output created from GeoRINM Viewer

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**Appendix 2**  
**Network Rail Protective Provisions**

PART 6

FOR THE PROTECTION OF NETWORK RAIL

Part to have effect unless otherwise agreed

- 1 The provisions of this Part of this Schedule have effect, unless otherwise agreed in writing between the undertaker and Network Rail, for the protection of Network Rail in relation to the construction, operation and maintenance of the authorised development.

**Interpretation**

- 2 In this Part of this Schedule -

"access road" means Work No. 6;

"gas pipeline" means Work No. 4;

"the engineer" means an engineer appointed by Network Rail for the purposes of this Order;

"Low Street level crossing" means the public access railway level crossing located on the London, Tilbury and Southend railway line at Station Road, Tilbury.

"network licence" means the network licence, as the same is amended from time to time, granted to Network Rail Infrastructure Limited by the Secretary of State in exercise of powers under section 8 (licences) of the Railways Act 1993;

"Network Rail" means Network Rail Infrastructure Limited (company number 02904587, whose registered office is at 1 Eversholt Street, London, NW1 2DN) and any associated company of Network Rail Infrastructure Limited which holds property for railway purposes within the Order limits, and for the purpose of this definition "associated company" means any company which is (within the meaning of section 1159 of the Companies Act 2006) the holding company of Network Rail Infrastructure Limited, a subsidiary of Network Rail Infrastructure Limited or another subsidiary of the holding company of Network Rail Infrastructure Limited;

"plans" includes sections, designs, design data, software, drawings, specifications, soil reports, calculations, descriptions (including descriptions of methods of construction), staging proposals, programmes and details of the extent, timing and duration of any proposed occupation of railway property;

"railway operational procedures" means procedures specified under any access agreement (as defined in the Railways Act 1993) or station lease;

"railway property" means any railway belonging to Network Rail Infrastructure Limited within the Order limits and -

- (a) any station, land, works, apparatus and equipment belonging to Network Rail Infrastructure Limited or connected with any such railway; and
- (b) any easement or other property interest held or used by Network Rail Infrastructure Limited for the purposes of such railway or works, apparatus or equipment; and

"Specified Work" means so much of the construction and maintenance of any of the authorised development as is situated upon, across, under, over or within 15 metres of, or may in any way adversely affect, railway property.

"water pipeline" means Work No. 7.

"Walton Common level crossing" means private access railway level crossing located on the London, Tilbury and Southend railway line approximately 0.6 miles south-west of Low Street level crossing.

3 Where under this Part of this Schedule Network Rail is required to give its consent, agreement or approval in respect of any matter, that consent, agreement or approval is subject to the condition that Network Rail complies with any relevant railway operational procedures and any obligations under its network licence or under statute.

#### 4

4.1 The promoter must not exercise the powers conferred by—

- (a) article 19 (*discharge of water*);
- (b) article 23 (*compulsory acquisition of land*);
- (c) article 24 (*compulsory acquisition of rights*);
- (d) article 25 (*acquisition of subsoil only*);
- (e) article 26 (*power to override easements and other rights*);
- (f) article 28 (*temporary use of land for carrying out the authorised development*);
- (g) article 29 (*temporary use of land for maintaining the authorised development*);

in respect of any railway property unless the exercise of such powers is with the consent of Network Rail.

4.2 The undertaker must not in the exercise of the powers conferred by this Order prevent pedestrian or vehicular access to any railway property, unless preventing such access is with the consent of Network Rail.

4.3 The undertaker must not commence construction of any works that would affect Network Rail's access to the operational railway and must enter into an agreement to provide Network Rail with permanent rights of access over the access road to enable it to gain access to the operational railway at no additional cost to Network Rail.

#### 5 —

5.1 The undertaker must not under the powers of this Order acquire or use or acquire new rights over any railway property except with the consent of Network Rail.

5.2 The undertaker must before commencing construction of any Specified Work supply to Network Rail proper and sufficient plans of that work for the reasonable approval of the engineer and the Specified Work must not be commenced except in accordance with such plans as have been approved in writing by the engineer or settled by arbitration under article 43 (arbitration).

5.3 The approval of the engineer under sub-paragraph (1) must not be unreasonably withheld, and if by the end of the period of 28 days beginning with the date on which such plans have

been supplied to Network Rail the engineer has not intimated disapproval of those plans and the grounds of disapproval the undertaker may serve upon the engineer written notice requiring the engineer to intimate approval or disapproval within a further period of 28 days beginning with the date upon which the engineer receives written notice from the undertaker. If by the expiry of the further 28 days the engineer has not intimated approval or disapproval, the engineer is deemed to have approved the plans as submitted.

5.4 If by the end of the period of 28 days beginning with the date on which written notice was served upon the engineer under sub-paragraph (2), Network Rail gives notice to the undertaker that Network Rail desires itself to construct any part of a Specified Work which in the opinion of the engineer will or may affect the stability of railway property or the safe operation of traffic on the railways of Network Rail then, if the undertaker desires such part of the Specified Work to be constructed, Network Rail must construct it without unreasonable delay on behalf of and to the reasonable satisfaction of the undertaker in accordance with the plans approved or deemed to be approved or settled under this paragraph, and under the supervision (where appropriate and if given) of the undertaker.

5.5 When signifying approval of the plans the engineer may specify any protective works (whether temporary or permanent) which in the engineer's opinion should be carried out before the commencement of the construction of a Specified Work to ensure the safety or stability of railway property or the continuation of safe and efficient operation of the railways of Network Rail or the services of operators using the same (including any relocation, de-commissioning and removal of works, apparatus and equipment necessitated by a Specified Work and the comfort and safety of passengers who may be affected by the Specified Works), and such protective works as may be reasonably necessary for those purposes must be constructed by Network Rail or by the undertaker, if Network Rail so desires, and such protective works must be carried out at the expense of the undertaker in either case without unreasonable delay and the undertaker must not commence the construction of the Specified Works until the engineer has notified the undertaker that the protective works have been completed to the engineer's reasonable satisfaction.

## 6 —

6.1 Any Specified Work and any protective works to be constructed by virtue of paragraph 5(4) must, when commenced, be constructed:

- (a) without unreasonable delay in accordance with the plans approved or deemed to have been approved or settled under paragraph 5;
- (b) under the supervision (where appropriate and if given) and to the reasonable satisfaction of the engineer;
- (c) in such manner as to cause as little damage as is possible to railway property; and
- (d) so far as is reasonably practicable, so as not to interfere with or obstruct the free, uninterrupted and safe use of any railway of Network Rail or the traffic thereon and the use by passengers of railway property.

6.2 If any damage to railway property or any such interference or obstruction is caused by the carrying out of, or in consequence of the construction of a Specified Work, the undertaker must, notwithstanding any such approval, make good such damage and must pay to Network Rail all reasonably and properly incurred expenses to which Network Rail may be put and compensation for any loss which it may properly sustain by reason of any such damage, interference or obstruction.

6.3 Nothing in this Part of this Schedule imposes any liability on the undertaker with respect to any damage, costs, expenses or loss attributable to the negligence of Network Rail or its servants,

contractors or agents, or any liability on Network Rail with respect to any damage, costs, expenses or loss attributable to the negligence of the undertaker or its servants, contractors or agents.

**7** The access road junction at Station Road must not be less than 90 metres from the stop-line of the Low Street level crossing.

## **8 —**

8.1 The undertaker must enter into an asset protection agreement with Network Rail in relation to the gas pipeline, water pipeline and access road to secure:

- (a) that no works shall be carried out without Network Rail's prior approval of the plans, specification, method statement and programme of works (including design information and construction methodology);
- (b) full access rights, during both the construction and operation phases, are retained for the benefit of Network Rail to enable the carrying out of all necessary maintenance, repair, renewal, inspection and enhancement works;
- (c) recovery of Network Rail's legal and professional fees, costs and disbursements incurred in connection with the proposals to carry out the works and any other costs incurred by Network Rail arising out of the construction, operation and maintenance of the works; and
- (d) no work will be carried out unless and until all consents, licences, registrations and authorisations (including any statutory or regulatory consents) are in place.

## **9**

9.1 The undertaker must include provisions relating to anti-dazzle fencing in the written details of Work No. 6 submitted pursuant to requirement 4 (Detailed Design) of Schedule 2.

9.2 The undertaker must not submit details of any proposed fencing in relation to Work No. 6 in accordance with requirement 4 (Detailed Design) of Schedule 2 without first submitting those details to Network Rail and obtaining Network Rail's approval in accordance with subparagraph (3)

9.3 The undertaker must provide to Network Rail the details of its proposed fencing in relation to Work No. 6 (including the anti-dazzle measures) together with an assessment of the impact of glare from vehicle headlights on train drivers and provided that Network Rail has provided details of any required amendments within 21 days of receipt of the proposed details the undertaker will incorporate such amendments as are required by Network Rail in the details it submits to the relevant planning authority pursuant to requirement 4 (Detailed Design) of Schedule 2.

9.4 Should the assessment under sub-paragraph (3) determine that anti-dazzle measures are required in relation to Work No. 6, and Network Rail confirm to the undertaker that it does not have sufficient funding to complete the required works, the undertaker shall pay for and deliver the works to the reasonable satisfaction of Network Rail and in accordance with any reasonable requirements of Network Rail prior to the commencement of the construction of Work No. 6.

## **10 —**

10.1 The undertaker must include provisions relating to fencing along the exchange common land and upgrades to gates bordering the Walton Common level crossing in the written details of Work No. 14 submitted pursuant to requirement 4 of Schedule 2.

10.2 The undertaker must not submit details of any proposed fencing and upgrades to gates in relation to Work No. 14 in accordance with requirement 4 (Detailed Design) of Schedule 2 without first submitting those details to Network Rail and obtaining Network Rail's approval in accordance with subparagraph (3).

10.3 The undertaker must provide to Network Rail the details of its proposed fencing and upgrades to gates in relation to Work No. 14 and provided that Network Rail has provided details of any required amendments within 21 days of receipt of the proposed details the undertaker will incorporate such amendments as are required by Network Rail in the details it submits to the relevant planning authority pursuant to requirement 4 of Schedule 2.

10.4 Should upgrade works be required to Walton Common level crossing gates and the fencing along Work No. 14 and the railway line due to the risk of trespass posed by the creation of Work No. 14 and Network Rail confirm to the undertaker that it does not have sufficient funding to complete the required upgrade works, the undertaker shall pay for and deliver the upgrade works to the reasonable satisfaction of Network Rail and in accordance with any reasonable requirements of Network Rail prior to the commencement of the construction of Work No. 14.

## 11

11.1 The undertaker shall not submit the construction traffic management plan or the construction worker travel plan to the relevant planning authority in accordance with requirement 6 and requirement 7 of Schedule 2 (Construction Traffic Management Plan and Construction Worker Travel Plan) without having first obtained the written approval of Network Rail in accordance with subparagraph (2).

11.2 The undertaker shall provide Network Rail with a draft of the relevant plan for approval and Network Rail shall within a period of 28 days beginning with the date on which the draft plan is received by Network Rail serve written notice on the undertaker confirming that:

- (a) the draft plan is approved; or
- (b) the draft plan is approved subject to reasonable amendments as required by Network Rail; or
- (c) the draft plan is not approved and the reason for the non-approval; or
- (d) that further information is required in order for Network Rail to make its determination (in which case this paragraph 7(2) shall apply to such further information from the date of its receipt by Network Rail).

11.3 In the event that Network Rail fails to serve written notice in accordance with paragraph 7(2) within 28 days of receipt Network Rail shall be deemed to have served a notice pursuant to paragraph 7(2)(a).

11.4 The undertaker must include any amendments which are required by Network Rail and notified to the undertaker by Network Rail in the notice given pursuant to paragraph 7(2)(b) in the draft plan it submits to the relevant planning authority and finalises in accordance with requirement 6 of Schedule 2 (Construction Traffic Management Plan) and requirement 7 of Schedule 2 (Construction Worker Travel Plan) and the undertaker shall not submit any such amendments to the relevant planning authority or finalise a plan which has not been approved by Network Rail in accordance with paragraphs 7(2) or (3) or settled by arbitration under article 43 (arbitration).

11.5 Network Rail shall approve the draft plan provided that:



- (a) in the engineer's opinion it makes sufficient provision to reduce the impact on railway property, including but not limited to the impact of additional traffic on the Low Street level crossing and the East Tilbury Road level crossing; and
- (b) should upgrade works be required to the approach road to Low Street level crossing due to the additional traffic proposed within the draft plan and Network Rail confirm to the undertaker that it does not have sufficient funding to complete the required upgrade works, the undertaker must pay for and deliver the upgrade works prior to the commencement of the authorised development.

11.6 Each notice and all other information required to be sent to Network Rail under the terms of this paragraph 7 must:

- (a) be sent to the Company Secretary and General Counsel at Network Rail Infrastructure Limited, 1 Eversholt Street, London, NW1 2DN via Royal Mail plc's special delivery service (or if this service is no longer being provided an appropriate recorded delivery postal service) and marked for the attention of the London North Western Route Level Crossing Manager; and
- (b) contain a clear statement on its front page that the matter is urgent and Network Rail must respond within 28 days of receipt.

11.7 In the event that any subsequent amendments are made to the construction traffic management plan or the construction worker travel plan following its approval by Network Rail, in so far as such amendments impact on railway property, the undertaker shall not submit any such amendments to the relevant planning authority or finalise any amendments to the construction traffic management plan or the construction worker travel plan which have not been approved by Network Rail in accordance with paragraphs 7(2) or (3).

12 The undertaker must -

- (a) at all times afford reasonable facilities to the engineer for access to a Specified Work or protective work during its construction; and
- (b) supply the engineer with all such information as the engineer may reasonably require with regard to a Specified Work or the method of constructing it.

13 Network Rail must at all times afford reasonable facilities to the undertaker and its agents for access to any works carried out by Network Rail under this Part of this Schedule during their construction and must supply the undertaker with such information as the undertaker may reasonably require with regard to such works or the method of constructing them.

**14 —**

14.1 If any permanent or temporary alterations or additions to railway property are reasonably necessary in consequence of the construction of a Specified Work, or during a period of 24 months after the completion of that Specified Work in order to ensure the safety of railway property or the continued safe operation of the railway of Network Rail, such alterations and additions may be carried out by Network Rail and if Network Rail gives to the undertaker reasonable notice of its intention to carry out such alterations or additions (which must be specified in the notice), the undertaker must pay to Network Rail the reasonable and proper cost of those alterations or additions including, in respect of any such alterations and additions as are to be permanent, a capitalised sum representing the increase of the costs which may be expected to be reasonably and properly incurred by Network Rail in maintaining, working and, when necessary, renewing any such alterations or additions.

14.2 If during the construction of a Specified Work by the undertaker, Network Rail gives notice to the undertaker that Network Rail desires itself to construct that part of the Specified Work which in the opinion of the engineer is endangering the stability of railway property or the safe operation of traffic on the railways of Network Rail then, if the undertaker decides that part of the Specified Work is to be constructed, Network Rail must assume construction of that part of the Specified Work and the undertaker must, notwithstanding any such approval of a Specified Work under paragraph 5.4, pay to Network Rail all reasonable expenses to which Network Rail may be put and compensation for any loss which it may suffer by reason of the execution by Network Rail of that Specified Work.

14.3 The engineer must, in respect of the capitalised sums referred to in this paragraph and paragraph 12(a) provide such details of the formula by which those sums have been calculated as the undertaker may reasonably require.

14.4 If the cost of maintaining, working or renewing railway property is reduced in consequence of any such alterations or additions a capitalised sum representing such saving must be set off against any sum payable by the undertaker to Network Rail under this paragraph.

15 The undertaker must repay to Network Rail all reasonable fees, costs, charges and expenses reasonably incurred by Network Rail:

- (a) in constructing any part of a Specified Work on behalf of the undertaker as provided by paragraph 5(3) or in constructing any protective works under the provisions of paragraph 5(4) including, in respect of any permanent protective works, a capitalised sum representing the cost of maintaining and renewing those works;
- (b) in respect of the approval by the engineer of plans submitted by the undertaker and the supervision by the engineer of the construction of a Specified Work;
- (c) in respect of the employment or procurement of the services of any inspectors, signallers, watchkeepers and other persons whom it is reasonably necessary to appoint for inspecting, signalling, watching and lighting railway property and for preventing, so far as may be reasonably practicable, interference, obstruction, danger or accident arising from the construction or failure of a Specified Work;
- (d) in respect of any special traffic working resulting from any speed restrictions which may in the opinion of the engineer, require to be imposed by reason or in consequence of the construction or failure of a Specified Work or from the substitution or diversion of services which may be reasonably necessary for the same reason; and
- (e) in respect of any additional temporary lighting of railway property in the vicinity of the Specified Works, being lighting made reasonably necessary by reason or in consequence of the construction or failure of a Specified Work.

16 If at any time after the completion of a Specified Work, not being a work vested in Network Rail, Network Rail gives notice to the undertaker informing it that the state of maintenance of any part of the Specified Work appears to be such as adversely affects the operation of railway property, the undertaker must, on receipt of such notice, take such steps as may be reasonably necessary to put that Specified Work in such state of maintenance as not adversely to affect railway property.

17 The undertaker must not provide any illumination or illuminated sign or signal on or in connection with a Specified Work in the vicinity of any railway belonging to Network Rail unless the undertaker has first consulted Network Rail and it must comply with Network Rail's reasonable requirements for preventing confusion between such illumination or illuminated sign or signal and any railway signal or other light used for controlling, directing or securing the safety of traffic on the railway.

18 Any additional expenses which Network Rail may reasonably incur in altering, reconstructing or maintaining railway property under any powers existing at the making of this Order by reason of the existence of a Specified Work must, provided that 56 days' previous notice of the commencement of such alteration, reconstruction or maintenance has been given to the undertaker, be repaid by the undertaker to Network Rail.

**19 —**

19.1 The undertaker must pay to Network Rail all reasonable costs, charges, damages and expenses not otherwise provided for in this Part of this Schedule which may be occasioned to or reasonably incurred by Network Rail -

- (a) by reason of the construction or maintenance of a Specified Work or the failure thereof; or
- (b) by reason of any act or omission of the undertaker or of any person in its employ or of its contractors or others whilst engaged upon a Specified Work;
- (c) by reason of any act or omission of the undertaker or any person in its employ or of its contractors or others whilst accessing to or egressing from the authorised development; or
- (d) in respect of any damage caused to or additional maintenance required to, railway property or any such interference or obstruction or delay to the operation of the railway as a result of access to or egress from the authorised development by the undertaker or any person in its employ or of its contractors or others,

and the undertaker must indemnify and keep indemnified Network Rail from and against all claims and demands arising out of or in connection with a Specified Work or any such failure, act or omission ; and the fact that any act or thing may have been done by Network Rail on behalf of the undertaker or in accordance with plans approved by the engineer or in accordance with any requirement of the engineer or under the engineer's supervision does not (if it was done without negligence on the part of Network Rail or of any person in its employ or of its contractors or agents) excuse the undertaker from any liability under the provisions of this sub-paragraph.

19.2 Network Rail must give the undertaker reasonable notice of any such claim or demand as soon as is reasonably practicable and no settlement or compromise of such a claim or demand is to be made without the prior consent of the undertaker.

19.3 The sums payable by the undertaker under sub-paragraph (1) may include a sum equivalent to the relevant costs.

19.4 Subject to the terms of any agreement between Network Rail and a train operator regarding the timing or method of payment of the relevant costs in respect of that train operator, Network Rail must promptly pay to each train operator the amount of any sums which Network Rail receives under sub-paragraph (3) which relates to the relevant costs of that train operator.

19.5 The obligation under sub-paragraph (3) to pay Network Rail the relevant costs is, in the event of default, enforceable directly by any train operator concerned to the extent that such sums would be payable to that operator pursuant to sub-paragraph (4).

19.6 In this paragraph -

“the relevant costs” means the costs, direct losses and expenses (including loss of revenue) reasonably incurred by each train operator as a consequence of any specified

work including but not limited to any restriction of the use of Network Rail's railway network as a result of the construction, maintenance or failure of a Specified Work or any such act or omission as mentioned in sub-paragraph (1); and

"train operator" means any person who is authorised to act as the operator of a train by a licence under section 8 (licences) of the Railways Act 1993.

20 Network Rail must, on receipt of a request from the undertaker, provide the undertaker free of charge with written estimates of the costs, charges, expenses, future costs forecasts and other liabilities for which the undertaker is or will become liable under this Part of this Schedule (including the amount of the relevant costs mentioned in paragraph 11) and with such information as may reasonably enable the undertaker to assess the reasonableness of any such estimate or claim made or to be made pursuant to this Part of this Schedule (including any claim relating to those relevant costs).

21 In the assessment of any sums payable to Network Rail under this Part of this Schedule there must not be taken into account any increase in the sums claimed that is attributable to any action taken by or any agreement entered into by Network Rail if that action or agreement was not reasonably necessary and was taken or entered into with a view to obtaining the payment of those sums by the undertaker under this Part of this Schedule or increasing the sums so payable.

22 The undertaker must give written notice to Network Rail if any application is proposed to be made by the undertaker for the Secretary of State's consent, under article 8 (consent to transfer benefit of Order) of this Order and any such notice must be given no later than 28 days before any such application is made and must describe or give (as appropriate) -

- (a) the nature of the application to be made;
- (b) the extent of the geographical area to which the application relates; and
- (c) the name and address of the person acting for the Secretary of State to whom the application is to be made.

23 Nothing in this Order, or in any enactment incorporated with or applied by this Order, prejudices or affects the operation of Part 1 (the provision of railway services) of the Railways Act 1993.

24 Any dispute arising between the undertaker and Network Rail under this Part of this Schedule will be determined by arbitration in accordance with article 43 (arbitration) unless otherwise agreed in writing by the undertaker and Network Rail.

### Appendix 3

#### Network Rail Requirement Amendments

Network Rail's proposed text is shown in red:

#### ARTICLE 2

A new definition is to be added to article 2 as follows:

"Network Rail" means Network Rail Infrastructure Limited (Company No. 02904587) whose registered office is at 1 Eversholt Street, London NW1 2DN

#### Requirement 4 – Detailed design

4.—(1) No part of the authorised development can be commenced until written details of the following for that part have been submitted to and approved by the relevant planning authority specifying—

(a) the siting, design, external appearance, dimensions and floor levels of all permanent buildings and structures; and

(b) the colour, materials and surface finishes of all permanent buildings and structures.

(2) The details to be submitted for approval under sub-paragraph (1) must—

(a) be in accordance with the design principles statement;

(b) include flood resilience measures for a flood level of up to 2.84 m above Ordnance Survey datum for critical equipment; and

(c) include appropriately scaled plans and sectional drawings.

(3) No works to the tidal defence wall in the vicinity of the proposed causeway can be commenced until the detailed design for that part has been submitted to and approved by the relevant planning authority in consultation with the Environment Agency.

(4) The authorised development must be designed in accordance with the parameters specified in Table 1 below and the works plans and constructed in accordance with approved plans and any other approvals given by the relevant planning authority pursuant to this requirement.

<b>Table 1</b> <i>Parameter</i>	<i>Work nos</i>	<i>Maximum value(s) and unit</i>
Gas engine exhaust stack height	1A(b)	43m AOD
Gas engine building(s) or equipment dimensions (in total)	1A(a, b, d, e, f)	Width: 135m Length: 265m Height: 20m
Battery building(s) or containers dimensions (in total)	1B	Width: 106m Length: 106m Height: 10m
Customer substation equipment height	1C(l)	15m
Height of all equipment and structures within Work 1 not otherwise specified	1	10m
National grid gas connection compound dimensions	5A	Width: 50m Length: 50m Height: 5m
Gas pipeline(s) maximum excavation depth	4	4m for trenched or 5m below base of feature crossed for trenchless construction
Underground cable(s) maximum depth	3A	4 m for trenched or 5 m below base of feature crossed for trenchless construction
Road construction working corridor width	6	20 m
Gas pipeline construction working corridor width	4	23 m
CCR minimum area	n/a	32,100 m <sup>2</sup>

(5) No part of Work No. 4, 6, 7, 8 or 14 can be commenced until written details for that Work No. have been submitted to and approved by NR in accordance with the protective provisions in paragraphs 8, 9, 10 and 11 of Part 6 of Schedule 9.

#### **Requirement 6 - Construction Traffic Management Plan**

6.—(1) No part of the authorised development can be commenced until a Construction Traffic Management Plan for that part has been submitted to and approved by Network Rail (in accordance with paragraph 11 of Part 6 of Schedule 9) and the relevant planning authority in consultation with the highway authority.

(2) The Construction Traffic Management Plan must:

(a) specify measures to manage the impacts of construction traffic during the construction works; and

(b) be substantially in accordance with the outline construction traffic management plan.

(3) Construction works for the authorised development must be carried out in accordance with the approved Construction Traffic Management Plan for that part.

(4) The plan submitted and approved under sub-paragraph 1 must include details of the routes to be used for the delivery of abnormal indivisible loads and procedures for the notification of these to Network Rail if the route includes railway assets.

#### **Requirement 7 - Construction Worker Travel Plan**

7.—(1) No part of the authorised development can be commenced until a Construction Worker Travel Plan for that part has been submitted to and approved by Network Rail (in accordance with paragraph 11 of Part 6 of Schedule 9) the relevant planning authority in consultation with the highway authority.

(2) The Construction Worker Travel Plan must be substantially in accordance with the outline construction worker travel plan.

(3) Construction works for the authorised development must be carried out in accordance with the approved Construction Worker Travel Plan for that part.

**Appendix 4**  
**Designated Route**



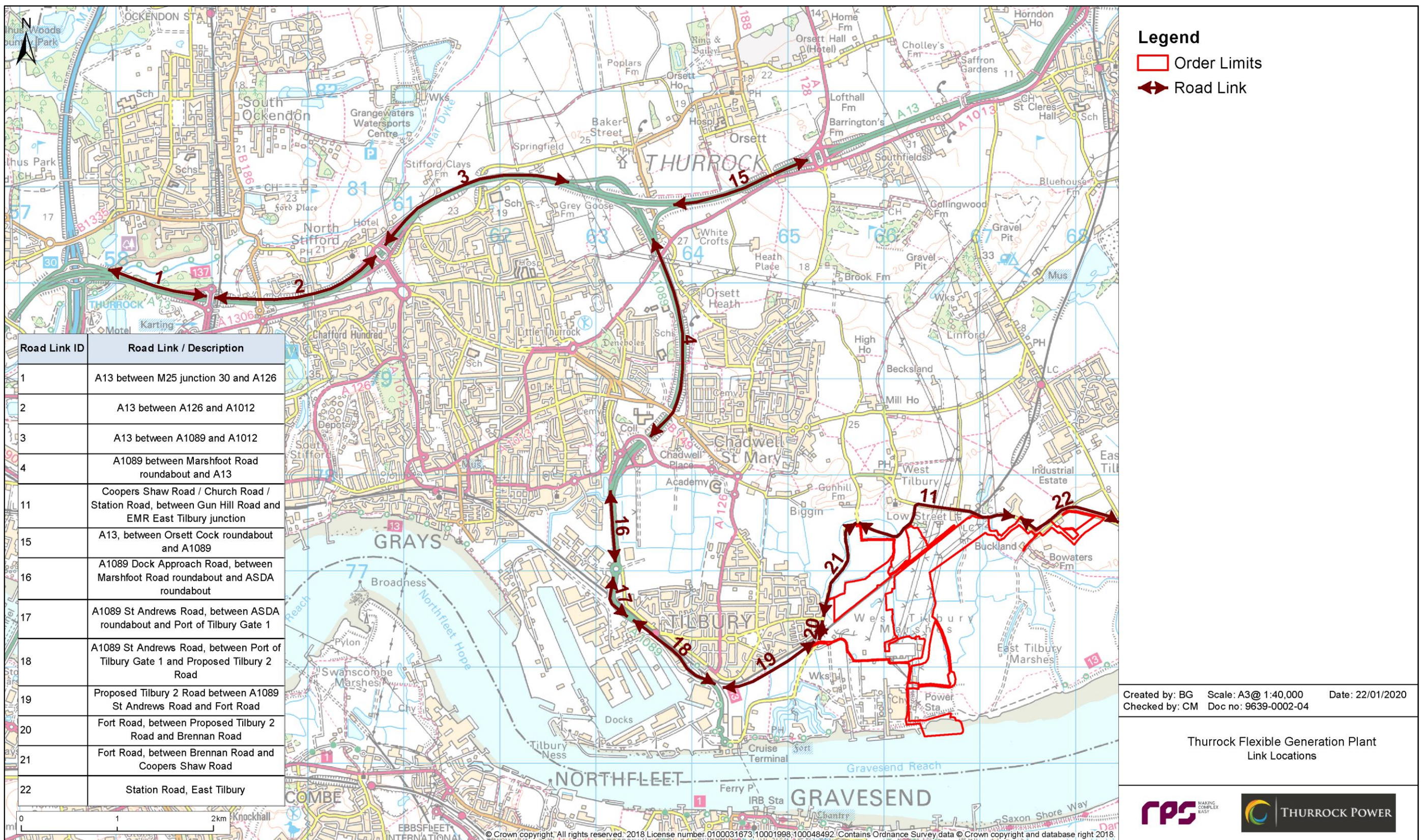


Figure 3.1: Link Locations



**Appendix 5**  
**Low Street level crossing ALCRM assessment**

# Combined Risk Results

## Crossing Details

Crossing Name: Low Street CCTV  
Crossing Type: CCTV  
Location Rail: TLL

## Usage

Vehicles 1140 per day  
Pedestrians/Cyclists 16 per day  
Trains 136 per day

Census 1 Type full (24 hours)  
Census 1 Date 13-Jan-2020 at 00:01

## Safety Risk

Individual Risk 1  
Collective Risk 6

User Type	Ind Risk (Fraction)	Ind Risk (Numeric)	Collective Risk	Derailment
Car	1 in 5917159	1.69E-07	7.90E-05	
Van / Small Lorries	1 in 993048	1.01E-06	1.66E-05	
HGV	1 in 4739336	2.11E-07	8.57E-06	
Bus	1 in 2380952	4.20E-07	4.30E-07	
Tractor / Farm Vehicle	1 in 237981	4.20E-06	4.30E-07	
Cyclist / Motorcyclist	1 in 145327	6.88E-06	6.53E-05	
Pedestrian	1 in 145327	6.88E-06	1.51E-05	
Passengers			9.28E-06	88.49710815
Staff			2.61E-05	4.59047079
Total			<b>2.21E-04</b>	4.263831807

## Collision Frequencies

	Train / User	User Equipment	Other
Vehicle:	2.28E-04	0.353069518	1.95E-04
Pedestrian:	8.87E-05	8.75E-05	3.15E-04

## Collision Risk

	Train / User	User Equipment	Other
Vehicle:	1.05E-04	0	0
Pedestrian:	7.20E-05	1.40E-06	6.93E-06

## Key Risk Drivers

Large Numbers of HGVs  
Frequent Trains  
User Misuses  
RD Visibility  
Crossing Approach

## Operational Risk

£ per year 2725

## Safety Spend

25 year £2,651.37  
50 year £3,200.64

# Combined Risk Results

## Crossing Details

Crossing Name: Low Street CCTV  
Crossing Type: CCTV  
Location Rail: TLL

## Usage

Vehicles 1140 per day  
Pedestrians/Cyclists 16 per day  
Trains 136 per day

Census 1 Type full (24 hours)  
Census 1 Date 13-Jan-2020 at 00:01

## Safety Risk

Individual Risk 1  
Collective Risk 6

User Type	Ind Risk (Fraction)	Ind Risk (Numeric)	Collective Risk	Derailment
Car	1 in 5917159	1.69E-07	6.71E-05	
Van / Small Lorries	1 in 993048	1.01E-06	1.41E-05	
HGV	1 in 4739336	2.11E-07	7.29E-06	
Bus	1 in 2380952	4.20E-07	3.66E-07	
Tractor / Farm Vehicle	1 in 237981	4.20E-06	3.66E-07	
Cyclist / Motorcyclist	1 in 170998	5.85E-06	5.55E-05	
Pedestrian	1 in 170998	5.85E-06	1.28E-05	
Passengers			7.89E-06	88.49710815
Staff			2.22E-05	4.59047079
Total			<b>1.88E-04</b>	4.263831807

## Collision Frequencies

	Train / User	User Equipment	Other
Vehicle:	2.28E-04	0.353069518	1.95E-04
Pedestrian:	8.87E-05	8.75E-05	3.15E-04

## Collision Risk

	Train / User	User Equipment	Other
Vehicle:	8.92E-05	0	0
Pedestrian:	6.12E-05	1.19E-06	5.89E-06

## Key Risk Drivers

User Misuses  
RD Visibility  
Crossing Approach  
Frequent Trains  
Large Numbers of HGVs

## Operational Risk

£ per year 2725

## Safety Spend

25 year £2,253.66  
50 year £2,720.54