Thurrock Flexible Generation Plant

Environmental Statement
Addendum – Alternative AIL Access

Date: April 2021

Environmental Impact Assessment

Environmental Statement

Addendum – Alternative AIL Access

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Summary

This document is an addendum to the Environmental Statement for Thurrock Flexible Generation Plant. It provides an assessment of impacts and effects arising from the proposed construction of an alternative access road for abnormal indivisible load (AIL) vehicles and modification of an existing private road to allow use by AILs.

Qualifications

This document has been prepared by Dr Peter Ireland who has more than thirty years of experience of environmental impact assessment and construction management, including of highway schemes.

It has been checked by Tom Dearing, a Chartered Environmentalist and full Member of the Institute of Environmental Management and Assessment, who has eight years' experience of environmental impact assessment

1. Non-Technical Summary

1.1 When building Thurrock Flexible Generation Plant, up to sixty large ‘abnormal indivisible load’ (AIL) vehicles will be needed to deliver heavy items of plant such as the gas engine blocks. In the existing application, these would be delivered by barge to a causeway in the Thames.

1.2 Following discussions with the Port of Tilbury, the applicant now proposes an alternative access route for these vehicles which could allow delivery via the port. The AIL vehicles would drive from the port, along Fort Road, and then travel along existing site roads through the recent Tilbury2 development and RWE's former Tilbury Power Station site.

1.3 However, the entrance road to Tilbury2 has a low bridge and there is a dog-leg in the existing RWE site road at the corner of Tilbury Substation, neither of which could currently be navigated by the AIL vehicles. Two new sections of private access road are therefore proposed to bypass these obstacles.

1.4 The area of works required for these changes is small, being an addition of approximately 1% to the Order Limits for Thurrock Flexible Generation Plant.

1.5 A 250m section of private road would be built immediately east of Fort Road, before the railway bridge, allowing the AIL vehicles to drive from Fort Road into the Tilbury2 site without passing under the low bridge.

1.6 On RWE’s former power station site, at the corner of Tilbury Substation, a 140m section of private road would be built to straighten the dog-leg turn.

1.7 The environmental baseline and potential environmental effects of building and using these private access roads for AIL vehicles have been assessed in this Environmental Statement Addendum.

1.8 As with all the other parts of the proposed flexible generation plant development, the construction work for these access roads would be managed through the Code of Construction Practice and the Construction Traffic Management Plan. Minor updates have been made to the management and mitigation measures in those documents.

1.9 These access roads would only be used by the AIL vehicles. Due to the low number (60 vehicles total) there is no potential for significant adverse effects from the traffic.

1.10 The access road off Fort Road would require a small amount of land, around a tenth of a hectare, on the edge of Tilbury Marshes Local Wildlife Site and Tilbury Fort Common. Much of the route follows the path of a temporary construction access road that was used for the Tilbury2 development and has now been restored to grassland and landscape planting. No significant effects on ecology, landscape, recreation or heritage value are predicted.

1.11 The Common Land would be replaced by the Exchange Common Land already proposed by the applicant between Fort Road and Parsonage Common. The area of Tilbury2 landscape planting that is affected would be replaced like-for-like on land that is immediately next to it.

1.12 At the section of new access road next to Tilbury Substation, it would cross an interceptor channel drainage ditch on RWE’s former Tilbury Power Station Site. This would be infilled. There is potential for water voles to be present in the ditch. As with other ditches affected by the proposed development, water voles would be moved into new or retained ditches.

1.13 Overall, the proposed new access road sections represent a minor addition to the Thurrock Flexible Generation Plant development. They would be constructed largely on land previously used for Tilbury2 temporary access works and RWE’s former Tilbury Power Station site. The construction works would be subject to the environmental management and mitigation measures already set out for the proposed development and the use would be by up to 60 AIL vehicles in total. No significant adverse effects in any environmental topic area are predicted.

2. Environmental Statement Addendum

2.1 Background and Need for the Addendum

Background

2.1.1 Thurrock Power Ltd proposes to develop a flexible generation plant on land north of Tilbury Substation in Thurrock. The flexible generation plant will provide up to 600 megawatts (MW) of gas-fired electrical generation capacity on a fast response basis, together with up to 150 MW of battery storage capacity.

2.1.2 The proposed development is a Nationally Significant Infrastructure Project (NSIP) for which Thurrock Power has submitted an application to the Planning Inspectorate (PINS) for development consent. The application is currently (April 2021) being examined.

2.1.3 Thurrock Flexible Generation Plant (FGP) is needed to provide resilience to the electricity grid when that is required due to unplanned outages and intermittent generation from renewable sources, particularly wind power, or short term demand from consumers (typically in the morning and evening, particularly in the winter). It will do so through providing peaking generation capacity from the fast-start gas engines, which will typically run for short periods. The battery storage facility will provide both electricity balancing and frequency management services for the grid.

2.1.4 The application for development consent was supported, *inter alia*, by an Environmental Statement (ES; application document A6, as amended post-acceptance) in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended). The ES describes all of the key elements of the construction and operation of the proposed FGP and provides a comprehensive assessment of the likely significant effects of those elements on the environment. One of the key elements is the transportation of large pieces of electrical generating and storage plant (e.g. gas engine blocks, transformers), collectively referred to as Abnormal Indivisible Loads (AILs), some of which can weigh several hundred tonnes. The maximum number of these specific AILs would be 60, as set out in the existing application.

2.1.5 The application boundary and location of the Project prior to this change are shown in Figure 1.1 of the ES. That is replaced with Figure 2.1 in this ES Addendum. The change in total size of the Order Limits is 1.2 ha or 1.4%. Excluding the section of Fort Road within the Order Limits (where only temporary powers are required), the additional area of development is 0.94 ha or a 1.1% increase on the existing Order Limits.

Need for the Addendum

2.1.6 Thurrock Power has reappraised the options for enabling AILs to access the main FGP site following engagement with Port of Tilbury London Ltd (PoTLL) about providing an access that would allow AILs to be delivered via Tilbury Port, Fort Road and the Tilbury2 site.

2.1.7 The revised AIL access strategy is to enable access by road for AILs to move between the public highway from Fort Road and the private highway network within the PoTLL's Tilbury2 port site. This is achieved by the construction of a short length of private highway suitable for AILs parallel to Fort Road. In addition, the two right angle bends on the local private highway network in RWE's former Tilbury Power Station site at the south-west corner of the Tilbury Substation require modification, by widening, to enable AILs to be transported.

2.1.8 Due to the above changes in the Project, the published ES requires an addendum detailing additional assessment of the proposed addition to, and modification of, the proposed access road to the main FGP site from the public highway. Those amendments and updates are provided in this ES Addendum.

2.1.9 The access route for construction HGVs (previously excluding AIL vehicles) in the ES was described as 'Zone H' and that zone reference is retained in this addendum to describe the route with the additional road and changes proposed to enable AIL access.

2.2 Structure of the Addendum

2.2.1 Following this initial chapter which briefly sets out the background to the Project and the need for this ES Addendum, Chapter 2 describes the proposed changes to the Project Description, together with an overview of the environmental baseline local to the addition or changes to the access.

2.2.2 Chapter 3 sets out the results of the environmental assessment of the alternative AIL access, together with a description of the scoping exercise undertaken and the results of consultation.

2.2.3 Chapter 4 provides a short summary of the Project changes set out in this Addendum together with a conclusion on the likely significant environmental effect of those changes.

2.3 Document Availability

2.3.1 This ES Addendum and its NTS can be viewed and downloaded free of charge from the Planning Inspectorate at the following website. (The full ES can also be accessed at the same location.)

https://infrastructure.planninginspectorate.gov.uk/projects/

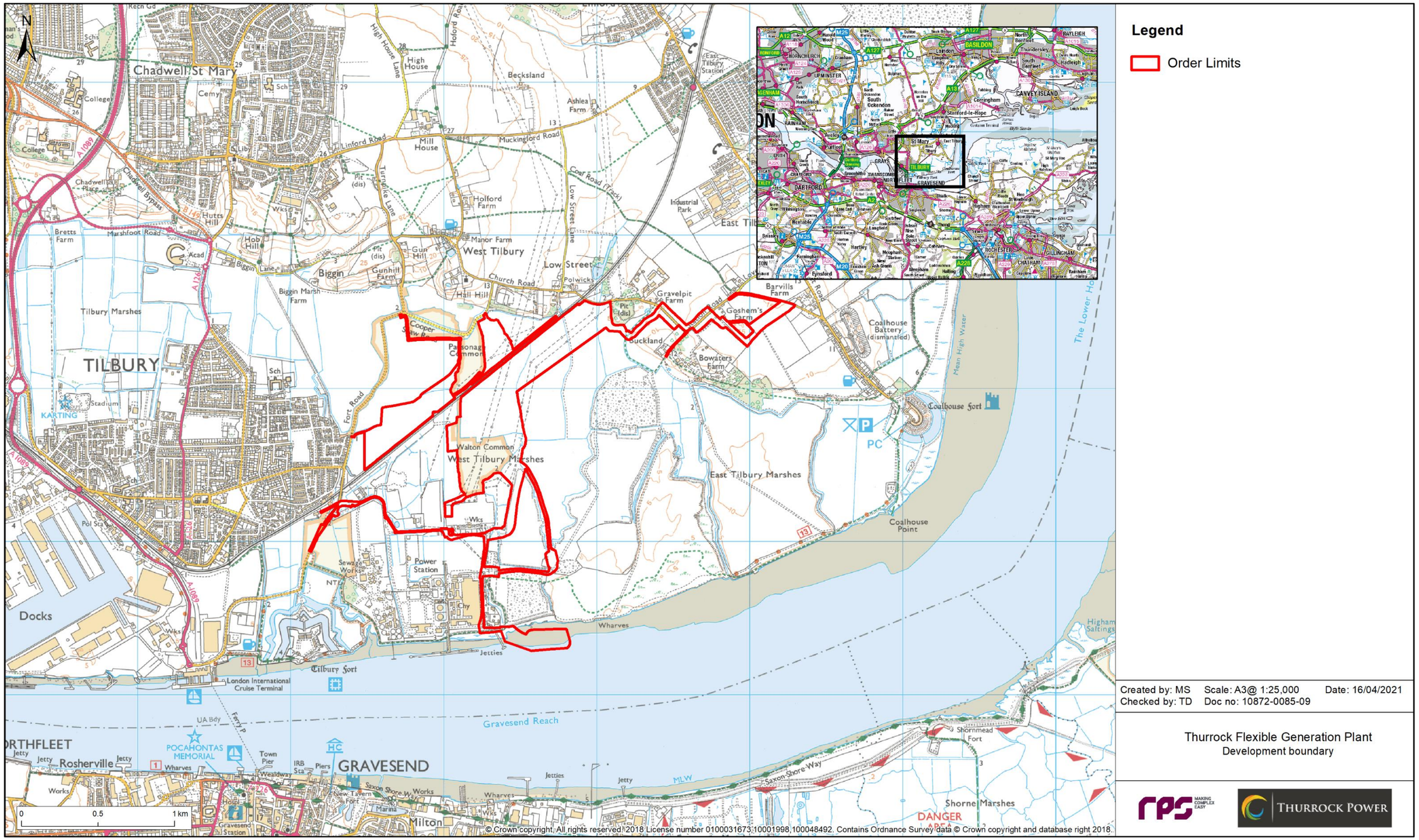

Figure 2.1: Site Location and Order Limits

3. Description of Changes

3.1 Western Section of Alternative AIL Access

3.1.1 The alternative AIL access at the western end of Zone H (the 'Western Section') comprises the construction and operation of approximately 250m of new 7.5m wide carriageway on the west side of, and parallel to, Fort Road where it has recently been modified to enable it to pass over the new private access from St Andrews Road to the Tilbury2 development. Figure 3.1 shows the location and key elements of the Western Section.

3.1.2 The Western Section will be separated from the retaining wall of the adjacent elevated Fort Road by approximately 3m. Within this separation there are a number of utility services, some of which may need to be diverted and/or protected/strengthened. A 2m wide verge would be provided on the eastern side of the new carriageway. The existing attenuation pond, which is part of the highway drainage system for the recently constructed private Tilbury2 access road, will be retained. The existing culvert under Fort Road may need strengthening depending on loadings and detailed design but will be extended in length by approximately 5m.

3.1.3 The southern end of the Western Section will join Fort Road opposite the T-junction where the spur off St Andrews Road joins Fort Road. The northern end of the Western Section will tie in with the recently constructed private Tilbury2 access road, east of the boundary with the adopted public highway at St Andrews Road. Both ends of the Western Section will be gated and closed to traffic when not in use. When in use the gates will be opened, and temporary traffic management measures will be implemented to enable the AILs to leave Fort Road and access Tilbury2 road safely.

3.1.4 The majority of the land required for the Western Section is in the ownership of the PoTLL and comprises an area of landscaping associated with the recently completed private road to St Andrews Road (see Figure 4.1), part of the Tilbury2 development. That mitigation comprises scrub and woodland planting. The remaining area, located at the south-eastern side of the Western Section, is common land and within the Tilbury Marshes Local Wildlife Site (LWS), a non-statutory site designated for the presence of relict grazing marsh, brackish ditches and grasslands.

3.1.5 The construction of the western section would require shallow excavation to enable an appropriate sub-base and pavement to be constructed suitable for AIL loads. Depending on the local ground conditions the new road may need to be piled. Construction works at the tie-in with Fort Road at the southern end of the new length of access may necessitate the temporary relocation locally of the adjacent bus stop during that part of the works. Similarly, some road signs on Fort Road may need to be repositioned to enable sight lines to be maintained. Changes to the highway infrastructure on Fort Road and the design of the tie-ins would be agreed with Thurrock Council as Highway Authority.

3.2 Eastern Section of Alternative AIL Access

3.2.1 The modifications required to accommodate AIL access at the two right angle bends on the local private highway network within Zone H at the south-west corner of Tilbury Substation are referred to as the 'Eastern Section', the location and details of which are set out in Figure 3.2.

3.2.2 The modifications involve the slackening off of the corners of the existing right angle bends by the creation of a new section of wider carriageway up to 12.9m wide to the south-west of the existing, avoiding the existing electricity pylons and other associated electrical infrastructure in the locality. Where, subject to detailed design, existing electrical apparatus cannot be avoided sufficient space has been included within the land required for the modifications to enable their relocation. 2m wide verges will be provided on either side of the new carriageway.

3.2.3 Any utility services affected by the modifications will be either diverted or strengthened and protected subject to detailed design. A notable feature affected by the Eastern Section is an east-west aligned drainage ditch, of which some 140m would require to be filled in, subject to detailed design. Water voles and reptiles have been recorded in the vicinity of that drainage ditch previously by RWE. Elsewhere the land cover comprises immature trees, scrub and rough grassland.

3.2.4 None of the land affected is designated.

3.2.5 The construction of the eastern section would mirror that of the western section and would require shallow excavation to enable an appropriate sub-base and pavement to be constructed suitable for AIL loads. The east-west aligned drainage ditch, which is understood to be redundant (see paragraph 2.7.3 below), would be filled in.

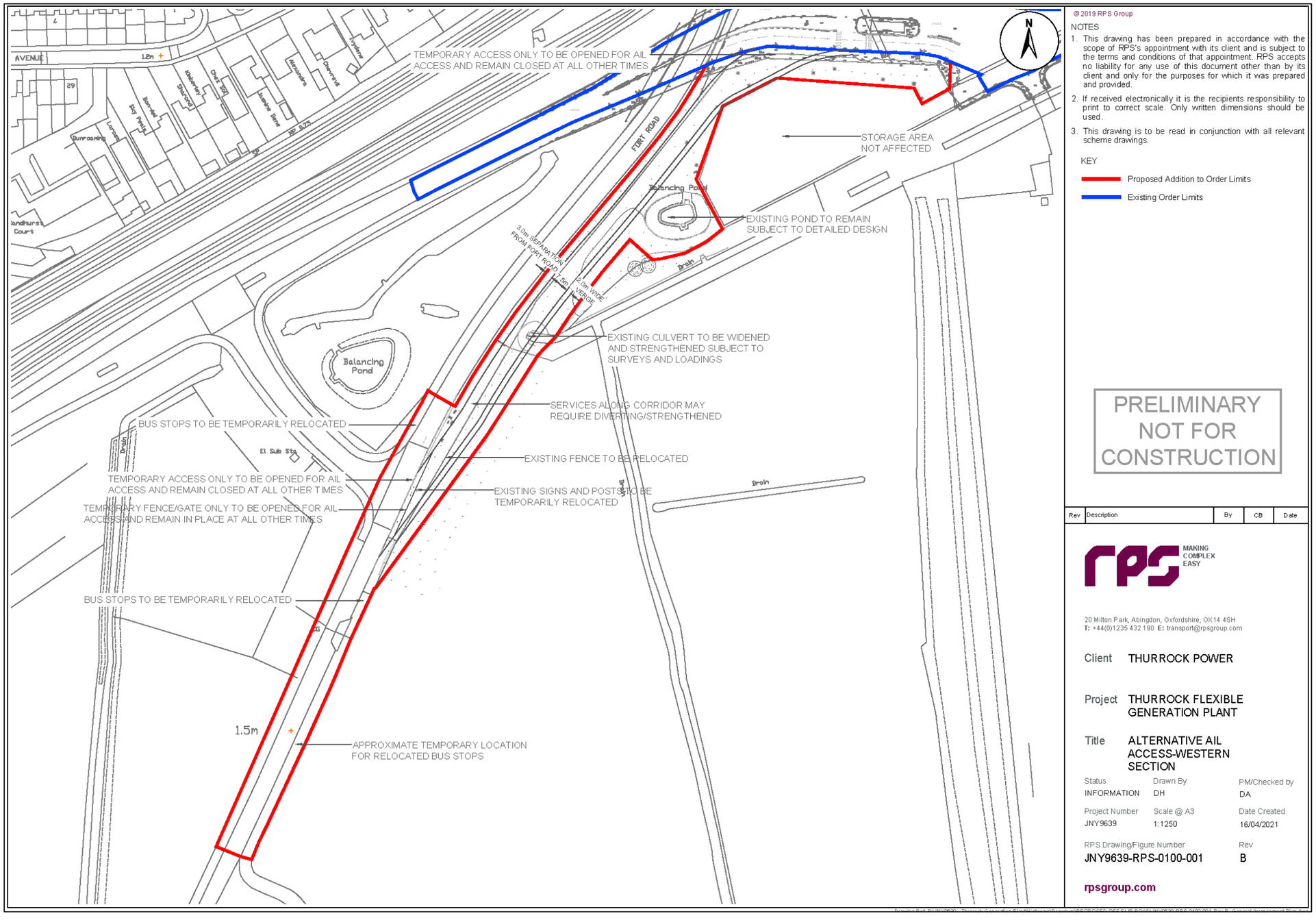

Figure 3.1: Alternative AIL Access – Western Section

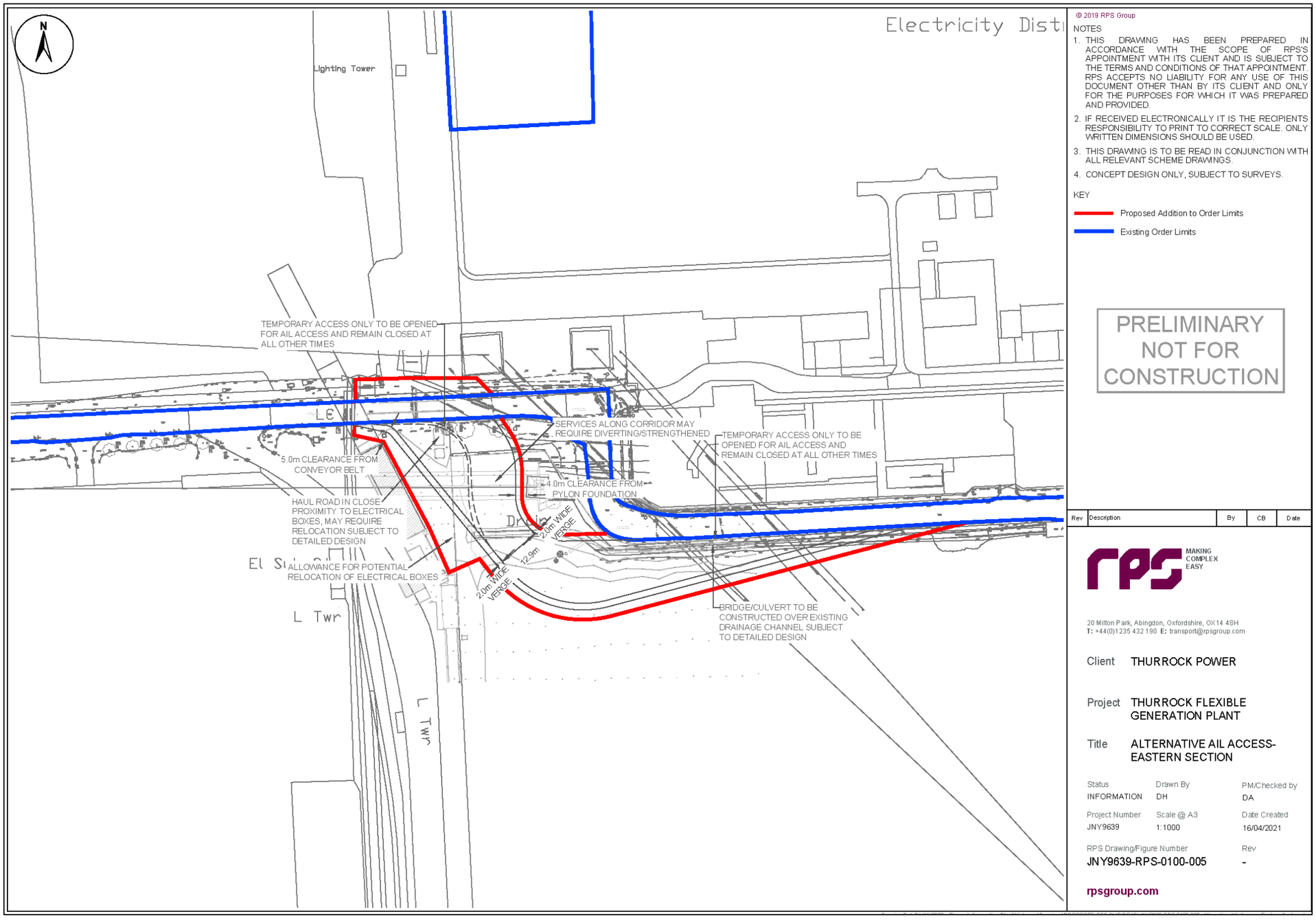

Figure 3.2: Alternative AIL Access – Eastern Section

3.3 Baseline – Landscape and Visual Resources

3.3.1 With regard to landscape character, in common with the majority of the Project, both of the modifications to Zone H are located within local Landscape Character Area C5 Tilbury Marshes as defined by the Thurrock Landscape Character Assessment, an area of drained alluvial marshland.

3.3.2 At the locations of the alternative accesses the majority of the existing vegetation within the west section comprises recently restored grassland together with scrub and woodland planting following the completion of the highway infrastructure works associated with St Andrews Road and the private access road which are part of the Tilbury2 development. The southern edge of the western section comprising some 464m^2 is common land grazed by horses, part of which is also part of the Tilbury Marshes LWS. The existing vegetation within the eastern section comprises hard standing, scrub and semi-improved rough grassland that has colonised part of the former coal stocking yard along its southern edge.

3.3.3 Apart from the common land at the western section, neither section has within it, or directly affects, any public rights of way, or other recreational assets (other than the aforementioned common land), or community facilities. In the location of the proposed western access, the closest visual receptors include people travelling along Fort Road, either by foot, vehicle, or other means. For the most part the location of the proposed western access is screened from residents of Tilbury by the elevated section of Fort Road as it crosses St Andrews Road and the railway line.

3.3.4 Visual receptors further from the location of the western section of the proposed access road, if they have views at all, have similarly partly screened views.

3.4 Baseline – Historic Environment

3.4.1 The proposed short length of private highway parallel to Fort Road crosses an area of agricultural grassland, part of which was used temporarily for the Tilbury2 project as a construction access, and therefore has previously been disturbed. The land is currently grazed by horses and the grassland sward on that part previously used by the Tilbury2 project is denuded but recovering. Part of the additional land required is also registered common land which belongs to common land parcel CL228 (The Green, Hall Hill, Fort Road, Parsonage, Walton and Tilbury Fort Commons). It comprises a slither of land on Tilbury Fort Common to the east of Fort Road and immediately adjacent to the new highway fence. It forms a very small part of the remaining area of the Common that lies on this side of the upgraded road.

3.5 Baseline – Land Use, Agriculture and Socio-Economics

3.5.1 The alternative access for transporting the AILs to the Thurrock Flexible Generation Plant will partly cross an area of agricultural grassland, part of which was used temporarily for the Tilbury2 project as a construction access. This area comprises similar soil types and patterns of soils; agricultural land quality and types of farm holdings as those found within the rest of the FGP development site. The land is currently grazed by horses and the grassland sward on that part previously used by the Tilbury2 project is denuded but recovering.

3.5.2 Part of the additional land required is also registered common land which belongs to common land parcel CL228 (The Green, Hall Hill, Fort Road, Parsonage, Walton and Tilbury Fort Commons). It comprises a sliver of land on Tilbury Fort Common to the east of Fort Road and immediately adjacent to the new highway fence. It forms a very small part of the remaining area of the Common that lies on this side of the upgraded road. The common is fenced and gated against the road on the eastern side as far as FP146. This means that public access to this parcel does not appear to be easily achieved and therefore its value as a recreational resource is severely limited.

3.6 Baseline – Ecology

Designated ecological sites

3.6.1 Parts of the western section of the access road, adjacent to Fort Road, lie within the Tilbury Marshes Local Wildlife Site (LWS), designated for presence of relict grazing marsh, brackish ditches and grasslands (the latter associated with Tilbury Fort).

3.6.2 Approximately 0.14 ha of the LWS is within the Application Site. Some of this overlaps with land taken permanently (0.03 ha) or temporarily (0.10 ha) for construction works associated with the Tilbury2 development, and therefore currently comprises either hard standing (road) or recently restored grassland, ditch and scrub / woodland planting. Therefore approximately 0.01 of LWS that was not previously affected by the Tilbury2 development would be affected by the proposals.

3.6.3 No other designated ecological sites would be affected.

Habitats

3.6.4 The western section comprises hard standing (roads) and recently restored grassland and scrub/woodland planting. A small section of restored ditch also occurs. As the majority of these habitats have been recently restored, they are not considered to have developed significant ecological value at this stage.

3.6.5 The eastern section lies within the RWE Tilbury site and comprises hard standing with adjacent scrub, semi-improved or poor semi-improved grassland and ditch. Approximately 140m of ditch lies within the eastern section.

Species

3.6.6 As the majority of the habitats in the western section have been recently restored, they are not considered likely to support significant populations of species of conservation interest.

3.6.7 However, previous surveys undertaken for PoTLL and RWE have recorded reptiles within sections of the Tilbury Marshes LWS, and it is therefore possible that reptiles would be present within the areas of new planting. Reptiles could also be present within the ditch and associated vegetation in the eastern section.

3.6.8 Neither the western section nor the eastern section is likely to support an assemblage of breeding birds of importance at more than site level, but measures to avoid damage or loss of nests during site clearance will be required.

3.6.9 Surveys undertaken of the eastern section by RWE in 2018 (RWE, 2019) and as reviewed for the main TFGP ES (APP-092, Volume 6 - Appendix 9.2 - Third Party Survey Reports) recorded a 'moderate' population of Water Vole in the ditch.

3.6.10 No other species of conservation interest are considered likely to occur.

Table 2.1: Summary of Important Ecological Features (IEFs)

IEF	Level of Importance
Tilbury Marshes LWS	County
Ditches	District
Reptiles	Site (assumed)
Breeding birds	Site (assumed)
Water Voles	District (assumed)

3.7 Baseline – Hydrology and Flood Risk

3.7.1 Both the western section and the eastern section are located on land assessed as at risk of tidal flooding, however as with the Zone A main development site, both areas benefit from flood defence measures affording protection against events with up to a 1 in 1,000 year event probability. The main risk to the access road would be as a consequence of a failure in local defences, with the greatest risk posed by a failure at the Tilbury Tidal Barrier.

3.7.2 The proposed access would cross a recently realigned drainage ditch which passes beneath Fort Road. The ditch provides degree of attenuation and is linked via a culvert to drainage features on the western side of Fort Road.

3.7.3 The proposed access would require the infilling of an existing drainage ditch. Based on a review of aerial photography, historic and Ordnance Survey mapping and drainage drawings provided by RWE it is understood that the ditch that is a remnant of an interceptor channel located on the northern extent of the former coal stocking area. The drain channel is understood to be isolated and not linked or conveying water from the wider local drainage network.

3.8 Baseline – Geology, Hydrogeology and Ground Conditions

3.8.1 The environmental setting of the site is similar to that of Zone H as assessed in the ES. The underlying geology/hydrogeology comprises Alluvium (Secondary Undifferentiated Aquifer), likely to be underlain by the Taplow Gravel (Secondary A Aquifer) and the White Chalk Subgroup (Principal Aquifer) in turn. Made Ground may be present associated with the construction of Fort Road immediately west and the railway line to the north. Two BGS boreholes, located c. <100m east of the AIL access road encountered firm becoming soft silty / peaty clays and sandy silt to a maximum depth of c. 6.5m below ground level (base unproven). Numerous drainage ditches are located within the area.

3.8.2 The Made Ground and adjacent land uses including the electricity substation to the east may represent sources of contaminants of concern.

4. Assessment of Effects

4.1 Introduction

4.1.1 The approach to assessment used in this Addendum follows that of the ES in terms of methodologies. It focuses on the main potential issues associated with the changes required to the access from Fort Road to Zone A. It does not therefore repeat matters that are covered in the ES and do not change (e.g. legislation or planning policy). Those remain pertinent.

4.2 Scoping

4.2.1 The following environmental assessment topics by chapter are scoped out of the assessment for the following reasons.

- Chapter 10 – Traffic and Transport – the changes are de minimis with respect to traffic and transport given the nature and extent of the access changes and the quantum and frequency of AIL movements.
- Chapter 11 – Operational Noise – there is no operational noise associated with the changes in road access, only potentially construction noise.
- Chapter 12 – Air Quality – the changes are de minimis with respect to air quality given the nature and extent of the access changes and the quantum and frequency of AIL movements. The construction works would be subject to the same good-practice dust management measures detailed in the existing ES for other construction works on the project including access roads.
- Chapter 13 – Human Health – other than health and safety matters during construction, which would be managed in accordance with the relevant legislation, the changes are de minimis with respect to human health given the nature and extent of the access changes and the quantum and frequency of AIL movements.
- Chapter 14 – Climate Change – the changes are de minimis with respect to climate change given the nature and extent of the access changes and the quantum and frequency of AIL movements.
- Chapter 17 – Marine Environment – there is no connection between the changes to road access and the marine environment.

4.2.2 The following environmental assessment topics by chapter are scoped into the assessment set out in this addendum as all potentially may be impacted by, or influence the construction and/or operation of, the changes in access.

- Chapter 6 – Landscape and visual resources
- Chapter 7 – Historic Environment
- Chapter 8 – Land Use, Agricultures and Socio-Economics including common land
- Chapter 9 – Onshore Ecology
- Chapter 11 – Construction Noise
- Chapter 15 – Hydrology and Flood Risk
- Chapter 16 – Geology, Hydrogeology and Ground Conditions

4.3 Consultation

4.3.1 The changes proposed are the result of consultation with interested parties during examination and have regard to the submissions made concerning access for AILs.

4.3.2 Thurrock Power Ltd has worked closely with PoTLL to develop and agree the details of these proposals within and connecting to the Port's operations. As set out in PoTLL's Deadline 3 submission (REP2-096), PoTLL is supportive of the change proposed.

4.3.3 RWE has been in regular contact with regarding the Eastern Section, which lies within RWE's site. As set out in RWE's submission at Deadline 3 (REP2-095, paragraph 3.11), RWE is supportive of the applicant exploring alternative access proposals.

4.3.4 Thurrock Power has discussed the proposed changes with Highways England on 15 April 2021 as parts of the access route are also proposed to be used by Highways England for Lower Thames Crossing (LTC) construction access. No conflicts with LTC access have been identified.

4.3.5 Thurrock Council as the local highway authority was initially consulted on 31 March 2021 and provided feedback concerning traffic management and temporary relocation of bus stops, which has been taken into account in the proposals. Thurrock Council was further consulted on 19 April 2021 to provide the access road drawings and details prior to submitting the change request.

4.3.6 Natural England and parties with an interest in the common land affected by this change are being consulted through the Commons Act 2006 s16 application, which is being submitted in parallel with the change application.

4.4 Assessment – Western Section

4.4.1 This section sets out the changes in assessment, by environmental topic, that result from the construction and operation of a new 250m of carriageway parallel to Fort Road.

Chapter 6 – Landscape and Visual Resources

4.4.2 No changes to the assessment set out in the ES are required in respect of either landscape resources and receptors, or visual resources and receptors, due to the construction or operation of the additional 250m of carriageway at the western section of Zone H parallel to Fort Road.

4.4.3 There would be a negligible change in landscape character as an area of grass, scrub and newly planted woodland would change to an length of road, grass and newly planted woodland.

4.4.4 The visual baseline and assessment of effects on visual resources and receptors was focused on Zone A (the flexible generation plant main development site) as that zone is where the majority of the development will take place. Nevertheless, two representative viewpoints, viewpoints 11 and 12, are from locations close to the western section. Viewpoint 11 is located on the railway bridge on Fort Road with a view eastward towards Zone A. That location is immediately to the north of the western section. Viewpoint 12 is located on Footpath 146, adjacent to the sewage works with a view north-eastward to Zone A. That location is approximately 600m south south-east of the western section.

4.4.5 From both viewpoints views of the additional length of carriageway would be at an oblique angle and seen against the backdrop of recent introduction of new storage and highway infrastructure (St Andrews Road and the modifications to Fort Road) associated with the Tilbury2 development. Consequently, the change in people's views from those locations would be Small or Negligible, depending on receptor location.

4.4.6 There would be no significant landscape or visual effects, resulting from the proposed western access.

Chapter 7 – Historic Environment

4.4.7 The proposed alternative access would not change the assessment of effects on the historic environment as set out in Chapter 7 of the ES.

4.4.8 During construction phase there may be impacts to the setting of Tilbury Fort Scheduled Monument from noise and vehicle movements, but these effects are temporary and reversible. Given the previous ground disturbance in the area there is not expected to be any impacts to below ground archaeological deposits: where impacts may occur to previously undisturbed archaeological remains, these will be mitigated through a programme of archaeological works as set out in the Outline Written Statement of Investigation, and made a condition of any DCO consent, to be undertaken post-determination.

Chapter 8 – Land Use, Agriculture and Socio-Economics

4.4.9 As set out in the Chapter 8 of the ES, it is proposed that an agricultural field north of the railway line, which comprises approximately 11.6 hectares of land and lies adjacent to Parsonage Common, would be offered in exchange for the common land being deregistered. The additional area of common affected by the alternative access for AILs would be approximately 0.05ha, making the total area of common to be de-registered as part of the project of 10.15ha. The area of replacement land would therefore still be in excess of that loss, resulting in a net gain in the area of common land parcel CL228. The proposed alternative access would therefore not change the assessment of effects on agricultural land classification, farm holdings or common land set out in Chapter 8 of the ES.

4.4.10 There would be no additional effects on public rights of way, cycle routes, visitor attractions or socio-economic receptors.

Chapter 9 – Onshore Ecology

Permanent loss of habitat within Tilbury Marshes LWS

4.4.11 The development would result in the loss of 0.12 ha of habitat within the LWS, of which 0.10 ha is land recently restored following construction of Tilbury2 and 0.02 ha (200m^2) is previously unaffected. The total area of the Tilbury Marshes LWS is 39.83 ha. The total habitat loss within the LWS therefore comprises 0.30% of the LWS. The area of the LWS previously unaffected is 0.05% of the LWS.

4.4.12 This impact is of local spatial extent, long term (permanent) duration, continuous and irreversible. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.4.13 The sensitivity of the receptor is considered to be **medium.**

4.4.14 It is predicted that the **minor** impact on the **medium** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.4.15 Although the effect is not significant in ES terms, mitigation in the form of replacement habitat planting is proposed. This will be on an equal area, like for like basis, to the planting within the Tilbury2 site that is affected by the proposed access road as shown in Figure 4.1. The residual impact is therefore considered to be **negligible.**

Permanent loss of reptile habitat

4.4.16 The development would result in the loss of small areas of habitat with potential to support reptiles. This impact is of local spatial extent, long term (permanent) duration, continuous and irreversible. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.4.17 Status of reptile populations in the affected areas is assumed to be low, given that the western section comprises habitats that have recently been restored. Clearance of habitat in the absence of mitigation would likely cause death or injury to reptiles, should they be present. The sensitivity of the receptor is therefore considered to be **low**.

4.4.18 It is predicted that the **minor** impact on the **low** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.4.19 If reptiles are present within the western section, there is sufficient suitable habitat outside of the application site for reptiles to be relocated via phased clearance of vegetation prior to commencement.

4.4.20 The main TFGP ecological mitigation strategy includes creation of additional areas of grassland and scrub suitable for reptiles, resulting in an overall net gain in reptile habitat.

4.4.21 The residual impact following further mitigation is predicted to be minor beneficial, leading to a **minor** beneficial significance of effect, which is not significant in EIA terms.

Permanent loss of breeding bird habitat

4.4.22 Losses of habitat for breeding birds are not in themselves considered significant. However, clearance of habitat in the absence of mitigation would likely cause death or injury to breeding birds if clearance occurs during the breeding season. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.4.23 The sensitivity of the receptor is considered to be **low.**

4.4.24 It is predicted that the **minor** impact on the **low** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.4.25 Mitigation to prevent impacts on breeding birds during site clearance would comprise clearance outside of the breeding season if practicable. Otherwise, a pre-commencement check for nesting birds would be undertaken and any active nests protected until chicks have fledged, following the principles outlined in the Outline Ecological Management Plan (OEMP; PDC-050).

4.4.26 The residual impact following further mitigation is predicted to be **no change**, leading to a **no change** significance of effect, which is not significant in EIA terms.

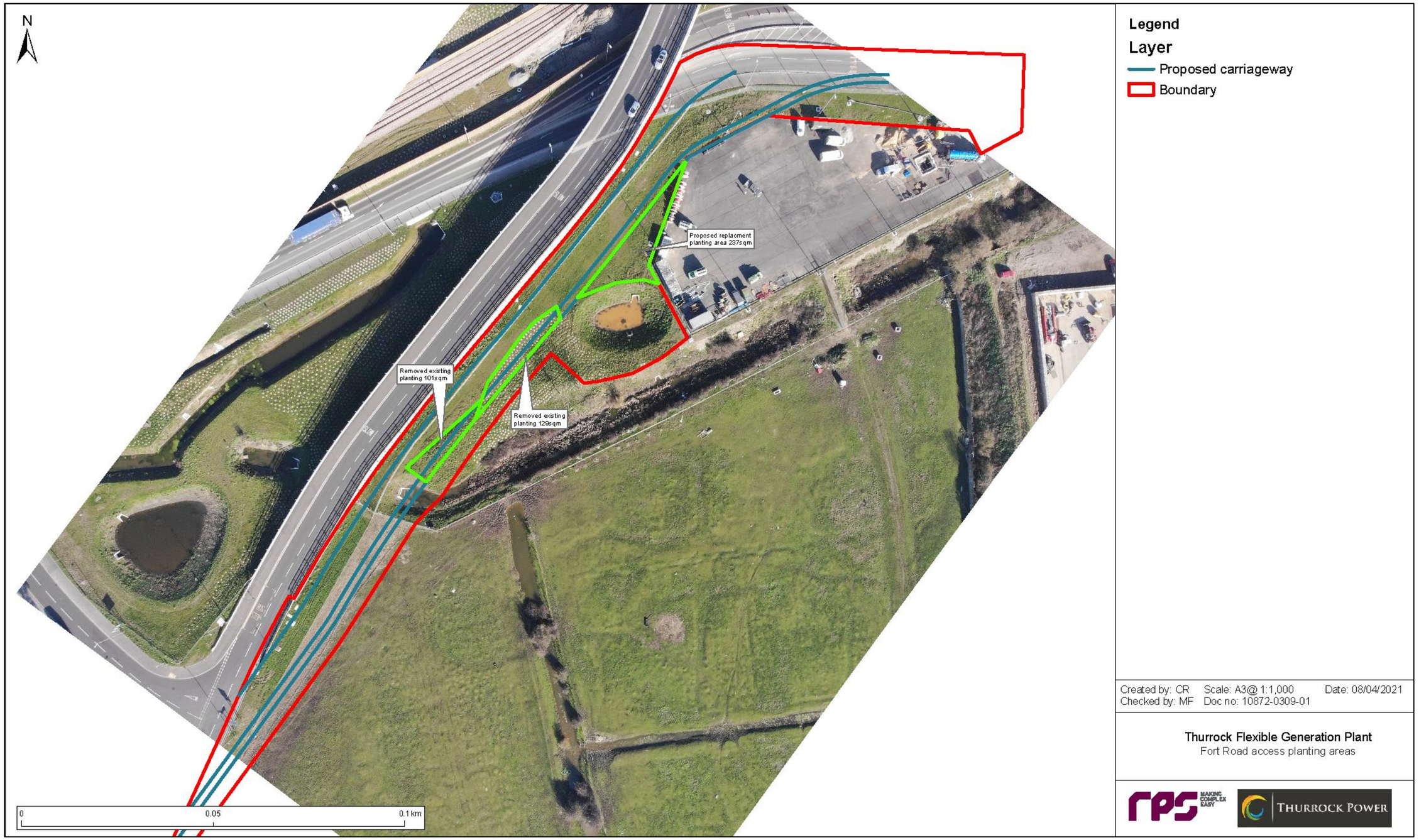

Figure 4.1: Landscape Planting

Chapter 11 – Construction Noise and Vibration

4.4.27 The nature of the superficial geology (made ground on unknown quality, alluvium with silt and peat, and gravels over chalk) and the historic land use of the area (grazing marsh) at the western access location raises the possibility that piling may be required for the footings of the western access road to support AILs.

4.4.28 Chapter 11 and Appendix 11.3 of the ES set out the assessment of, and mitigation from noise from a variety of construction activities, including piling using a hydraulic hammer rig. The predictions of construction noise on affected residential receptors showed that the highest predicted noise levels of 55 dB $L_{Aeq,T}$, would occur at Walnut Tree Farm due to general construction activities and HDD drilling in Zone C some 150m from the receptor. That noise level would result in a **negligible** or **minor adverse** effect.

4.4.29 At the western section access road section, levels of construction noise experienced at the nearest residential properties on Sandhurst Road, approximately 100m from the new access road at its closest point, would be no more than 55 dB $L_{Aeq,T}$. This would be achieved by using a rotary auger rig, as opposed to a hydraulic hammer rig, and the shielding effect of the elevated Fort Road at that location. There would therefore be no increase in the **negligible** to **minor adverse** construction noise effect predicted in the ES.

4.4.30 In common with the ES, road movements of the abnormal loads have been scoped out of this construction noise assessment for the following reasons. A total of 60 AIL deliveries are proposed over the duration of the construction. Due to the low number, the shielding effect of the bridge over the railway and St Andrews Road, together with distance of the proposed route from the closest receptors, it is not predicted that the movement of AILs will have any additional contribution to construction noise levels.

Chapter 15 – Hydrology and Flood Risk

4.4.31 There is potential for modifications to the existing drainage culvert under Fort Road and to the Tilbury balancing pond to affect their drainage function and capacity. A requirement of detailed design of the western access road section will therefore be that this function and capacity is maintained, such that there is no impact or effect n hydrology and flood risk.

4.4.32 Construction activities will be subject to the mitigation and control measures already required to be implemented for the project's construction works including accesses, as set out in the existing register of mitigation commitments (REP2-030) and the Outline Code of Construction Practice (REP2-035), and no significant effects are predicted,.

4.4.33 Operational impacts and effects are considered to be unlikely with the highway surface water drainage system in place.

Chapter 16 – Geology, Hydrogeology and Ground Conditions

4.4.34 Potential impacts on construction workers, adjacent land users, underlying aquifers, and watercourses associated with the proposed alternative AIL access road are similar to those described for the main development. Potential impacts during construction may include mobilising unexpected contamination or the creation of preferential pathways to groundwaters (e.g. through earthworks and piling) and/or new contamination being introduced as a result of the construction activity.

4.4.35 The predicted effects are considered to be not significant in EIA terms given the mitigation and control measures required to be implemented prior to and during the construction and operational phases as set out in the existing register of mitigation commitments (REP2-030) and the Outline Code of Construction Practice (REP2-035).

4.5 Assessment – Eastern Section

4.5.1 This section sets out the changes in assessment, by environmental topic, that result from the modification of the road access in Zone H at the south-west corner of Tilbury Substation.

Chapter 6 – Landscape and Visual Resources

4.5.2 No changes to the assessment set out in the ES would occur in respect of either landscape resources and receptors, or visual resources and receptors, due to the modifications at the eastern section of Zone H adjacent to the south-west corner of Tilbury Substation. There would be a negligible change to landscape receptors and a negligible change to views experienced by visual receptors.

4.5.3 There will be no significant landscape or visual effects, resulting from the proposed eastern access

Chapter 7 – Historic Environment

4.5.4 No changes to the assessment set out in the ES would occur from the increase the Order Limits over a small section of Zone H opposite the south west corner of Tilbury Substation.

Chapter 8 – Land Use, Agriculture and Socio-Economics

4.5.5 No changes to the assessment set out in the ES would occur from the increase the Order Limits over a small section of Zone H opposite the south west corner of the Tilbury Substation as there is no public access or agricultural land.

Chapter 9 – Onshore Ecology

Permanent loss of ditches

4.5.6 The modifications would result in the loss of c140 m of ditch. This impact is of local spatial extent, long term (permanent) duration, continuous and irreversible. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.5.7 Ditch habitat is considered to be of district value. It is a habitat type that is relatively straightforward to create in a relatively short period of time. The receptor is therefore considered to be of low vulnerability, high recoverability and district value. The sensitivity of the receptor is therefore, considered to be **low**.

4.5.8 It is predicted that the **minor** impact on the **low** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.5.9 To put the loss of ditch in the context of the wider TFGP application site, 1.4 km of ditches are retained or enhanced within Zone A, and approximately 589 m of ditches are lost in Zones A and C combined. The habitat creation proposals would provide approximately 976 m of new ditches, giving a net increase of approximately 390m.

4.5.10 The loss of the additional 140m of ditch therefore does not result in an overall loss of ditch habitat, resulting in a net increase of approximately 250m, and overall the residual impact and effect following further mitigation is predicted to be **minor beneficial**, which is not significant in EIA terms.

Permanent loss of reptile habitat

4.5.11 The development would result in the loss of small areas of habitat with potential to support reptiles. This impact is of local spatial extent, long term (permanent) duration, continuous and irreversible. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.5.12 Status of reptile populations in the affected areas is assumed to be low, given that the eastern section comprises a relatively isolated habitat between the substation to the north and the recently demolished power station land to the south. Clearance of habitat in the absence of mitigation would likely cause death or injury to reptiles. The sensitivity of the receptor is therefore considered to be **low.**

4.5.13 It is predicted that the **minor** impact on the **low** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.5.14 If reptiles are present within the eastern section, there is unlikely to be sufficient habitat adjacent to the application boundary to support displaced reptiles. Therefore, reptiles would be translocated to the Zone A receptor site following the principles outlined in the OEMP (PDC-050).

4.5.15 The main TFGP ecological mitigation strategy includes creation of additional areas of grassland and scrub suitable for reptiles, resulting in an overall net gain in reptile habitat.

4.5.16 The residual impact following further mitigation is predicted to be minor beneficial, leading to a **minor** beneficial significance of effect, which is not significant in EIA terms.

Permanent loss of breeding bird habitat

4.5.17 Losses of habitat for breeding birds are not in themselves considered significant. However, clearance of habitat in the absence of mitigation would likely cause death or injury to breeding birds if clearance occurs during the breeding season. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.5.18 The sensitivity of the receptor is considered to be **low.**

4.5.19 It is predicted that the **minor** impact on the **low** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.5.20 Mitigation to prevent impacts on breeding birds during site clearance would comprise clearance outside of the breeding season if practicable. Otherwise, a pre-commencement check for nesting birds would be undertaken and any active nests protected until chicks have fledged, following the principles outlined in the OEMP (PDC-050).

4.5.21 The residual impact following further mitigation is predicted to be **no change**, leading to a **no change** significance of effect, which is not significant in EIA terms.

Permanent loss of water vole habitat

4.5.22 The development would result in the loss of 140 m of ditch with potential to support water voles. This impact is of local spatial extent, long term (permanent) duration, continuous and irreversible. The impact will affect the receptor directly. The magnitude is considered to be **minor**.

4.5.23 Water voles across the wider TFGP site are considered to be of county value (assuming population numbers recover from lower populations observed in surveys from 2019 and 2020). Water voles are known to be declining on a national level due to habitat loss and predation from mink. The receptor is therefore considered to be of high vulnerability, medium recoverability and county value. The sensitivity of the receptor is therefore, considered to be **medium**.

4.5.24 It is predicted that the **minor** impact on the **medium** sensitivity receptor would result in a **minor** adverse effect, which is not significant in EIA terms.

Further mitigation or enhancement

4.5.25 As noted above the loss of the additional 140m of ditch does not result in an overall loss of ditch habitat, with a net increase of approximately 250m still achieved.

4.5.26 Water voles would be translocated from the application site following the principles set out in the OEMP (PDC-050). The receptor site would comprise the enhanced Zone A boundary ditches, or, subject to agreement, the PoTLL water vole mitigation area adjacent to the western Zone A boundary.

4.5.27 The residual impact following further mitigation is predicted to be minor beneficial, leading to a **minor** beneficial significance of effect, which is not significant in EIA terms.

Chapter 11 – Construction Noise and Vibration

4.5.28 Construction noise and vibration is scoped out of this assessment due to the distance from the nearest noise sensitive receptors.

Chapter 15 – Hydrology and Flood Risk

4.5.29 As set out in Section 3.7, the drain channel that would be crossed by the eastern section of the access road is understood to be isolated and not linked or conveying water from the wider local drainage network. Subject to survey and detailed design, this section is therefore proposed to be infilled. Alternatively, if it were necessary to maintain a drainage flow, a diverted or culverted channel could be provided within the works area for this access road section. No adverse effects on hydrology or flood risk are predicted.

4.5.30 Construction activities will be subject to the mitigation and control measures already required to be implemented for the project's construction works including accesses, as set out in the existing register of mitigation commitments (REP2-030) and the Outline Code of Construction Practice (REP2-035), and no significant effects are predicted,.

4.5.31 Operational impacts and effects are considered to be unlikely with the highway surface water drainage system in place.

Chapter 16 – Geology, Hydrogeology and Ground Conditions

4.5.32 Potential impacts on construction workers, adjacent land users, underlying aquifers, and watercourses associated with the proposed alternative AIL access road are similar to those described for the main development. Potential impacts during construction may include mobilising unexpected contamination or the creation of preferential pathways to groundwaters and/or new contamination being introduced as a result of the construction activity.

4.5.33 The predicted effects are considered to be not significant in EIA terms given the mitigation and control measures required to be implemented prior to and during the construction and operational phases as set out in the existing register of mitigation commitments (REP2-030) and the Outline Code of Construction Practice (REP2-035).

5. Conclusions

5.1 The proposed alternative access for abnormal indivisible load (AIL) vehicles comprises two sections of new private highway: around 250m of new private highway from Fort Road to the Tilbury2 site, avoiding the low bridge at the main Tilbury2 entrance; and around 140m of new private highway close to the south-western corner of Tilbury Substation where the existing site road has dog-leg turns.

5.2 The area of works required for these changes is small, being an addition of approximately 1% to the Order Limits for Thurrock Flexible Generation Plant. This access route would be used only by AIL vehicles for the proposed development. There would be up to 60 total AIL vehicles required.

5.3 The environmental baseline, potential impacts and resulting effects on receptors from construction and use of this alternative AIL access have been assessed in this ES Addendum.

5.4 Due to the low number of vehicle movements, this is a de minimis change with regard to traffic and no significant effects on transport nor associated effects on air quality, noise, health or climate change are likely, so these topics have been scoped out of assessment. There is no connection to the marine environment and no potential for impacts or effects on it.

5.5 Minor updates to the Construction Traffic Management Plan have been made to describe safe management of the AIL vehicle movements.

5.6 Construction of the access road sections would be subject to the environmental management and mitigation measures for other Flexible Generation Plant works, including the other access road sections, as already described in the application. Minor updates to the Code of Construction Practice to refer to these works have been made. If piling is required for the access road section next to Fort Road, this would be undertaken with a rotary auger rig to minimise noise impacts.

5.7 With the existing mitigation and environmental management measures, no significant effects from construction of the two access road sections are predicted.

5.8 There would be a loss of 0.05 ha of Common Land adjacent to Fort Road. This would be replaced as part of the proposed development's existing Exchange Common Land between Fort Road and Parsonage Common. No significant effect on land use, recreation, landscape character or the historic environment would occur.

5.9 There would be a loss of 0.12 ha of habitat from the edge of Tilbury Marshes Local Wildlife Site, much of which was previously affected by temporary works for Tilbury2. No significant effect on the Local Wildlife Site or ecological receptors is predicted. Minor alterations to Tilbury2's landscape planting immediately east of Fort Road would be made where the new access road would require removing a small number of recently planted saplings; these would be replaced like for like immediately adjacent to the planting area with no net change.

5.10 At the eastern section of new access road next to Tilbury Substation, a section of remnant interceptor channel ditch on RWE's former Tilbury Power Station Site would be infilled where the access road crosses it. There is potential for Water Vole to be present, and the existing mitigation strategy for ditches with Water Vole, of translocation into new and retained ditches for the proposed development, would be followed, with no significant effects predicted.

5.11 Overall, the proposed new access road sections represent a minor addition to the proposed Thurrock Flexible Generation Plant development. They would be constructed largely on land previously used for Tilbury2 temporary access works and RWE's former Tilbury Power Station site. The construction works would be subject to the environmental management and mitigation measures already set out for the proposed development and the use of access would be by up to 60 AIL vehicles in total. No significant adverse effects in any environmental topic area are predicted.