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20.0 SUMMARY OF SIGNIFICANT EFFECTS

20.1 Introduction

20.1.1 Chapters 7 to 19 of this Environmental Statement (ES) have considered the potential environmental impacts and effects of the Proposed Development. This chapter provides a summary of those adverse and beneficial environmental effects that are considered to be significant (i.e. moderate and major effects).

20.1.2 This Chapter is accompanied by a Commitments Register presented within Appendix 20A in ES Volume III (Document Ref. 6.4), which summarises all the impact avoidance, mitigation and enhancement measures that the Applicant is committed to delivering as part of the Proposed Development.

20.2 Significant Environmental Effects and Proposed Mitigation Measures

20.2.1 Table 20.1 summarises the significant environmental effects of the Proposed Development that have been identified, following implementation of the embedded mitigation or impact avoidance measures included in the design of the Proposed Development (as detailed in Chapters 7 to 19, where relevant). Table 20.1 also summarises any additional mitigation measures that have been identified in the technical assessments contained in Chapters 7 to 19.

20.2.2 For each topic, the worst case scenario is assessed, including the worst case construction programme scenario (of the three set out in Chapter 5: Construction Programme and Management) and the worst case design parameters (the Rochdale Envelope, as set out in Chapter 4: The Proposed Development). The worst case selected for each topic assessment is described in Chapters 7 to 19.

20.2.3 Effects have been assessed for the construction, operation (including maintenance) and decommissioning scenarios.

20.2.4 As outlined in Chapter 2: Assessment Methodology, for the purposes of this EIA an effect is considered to be 'significant' if it is assessed to be moderate (adverse or beneficial) or major (adverse or beneficial). Minor and negligible effects are only referenced in this chapter where a 'significant' (moderate or major) effect has been reduced to a 'not significant' effect following mitigation.

20.2.5 To provide further clarification on the nature of the effects, each has been identified for the purposes of this summary as:

- short term (St) – effects occurring only over a relatively short period of time (less than five years), e.g. an effect that only lasts for the duration of the construction period;
- medium term (Mt) – effects occurring for a period of approximately five to fifteen years, e.g. a visual effect from a development that is removed when mitigation planting has matured; or
- long term (Lt) – effects occurring throughout the operation of the Proposed Development (and potentially beyond), e.g. due to a change in land use as a result of a development;

- temporary (T) – effects that are not permanent because the effect would no longer occur if the impact was removed, e.g. a disturbance effect that ceases when the source of the disturbance is no longer present;
- permanent (P) – effects that are permanent and cannot be readily reversed, e.g. the loss of an ecological habitat that cannot be replaced; and
- direct (D) – effects that occur as a direct result of an impact caused by a development, e.g. a change in noise level as a result of development-related activity; or
- indirect (In) – also known as secondary effects, effects that occur as a result of a pathway of impacts, e.g. socio-economic benefits due to construction workers spending money at local businesses.

Table 20.1: Summary of significant effects

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|---|--|--|--|--|--|
| Chapter 7: Air Quality | | | | | |
| Construction | No significant effects identified | | | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 8: Noise and Vibration | | | | | |
| Construction | (Noise from drop-hammer piling on Receptor 4 (field south of the Site) discussed in Chapter 10: Ecology and Nature Conservation summary below) | (Refer to Chapter 10: Ecology and Nature Conservation summary below) | (Refer to Chapter 10: Ecology and Nature Conservation summary below) | (Refer to Chapter 10: Ecology and Nature Conservation summary below) | (Refer to Chapter 10: Ecology and Nature Conservation summary below) |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 9: Traffic and Transport | | | | | |
| Construction | No significant effects identified | | | | |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|----------------------------|---|--|--|--|---|
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 10: Ecology | | | | | |
| Construction | Disturbance of waterbirds using field to south of Site due to noise/ vibration from drop-hammer piling during winter months | Moderate adverse (significant) if drop hammer piling works takes place in the winter months (September to March inclusive) | Commitment to implement appropriate mitigation, with flexibility as to measure/ method, but which potentially include: <ul style="list-style-type: none"> • alternative quieter piling methods e.g. Continuous Flight Auger (CFA) piling to reduce noise, which could be applied at any time of year; | Minor adverse (not significant) | St/ T/ D |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|-------------------|---|--|---|--|---|
| | | | and/ or <ul style="list-style-type: none"> • seasonal restrictions to avoid impacts by not using drop hammer piling for two hours either side of high tide between September and March (inclusive) | | |
| Construction | Loss of 6.7 ha of semi-improved grassland evaluated to be of District nature conservation value | Moderate adverse (significant) | Creation and appropriate management of species-rich grassland and a new wildlife pond within the Site as well as | Minor adverse (not significant) | Lt/ P/ D |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|---|---|--|---|--|---|
| | | | enhancement of ditch habitats for water vole, enhancement of existing grassland areas to improve their ecological value, creation of new species-rich native hedgerows, and installation of bird boxes and log piles. See Biodiversity Strategy (Document Ref. 5.11). | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 11: Landscape and Visual Amenity | | | | | |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|---|--|--|---|--|---|
| Construction | Impact on visual amenity footpath users at Viewpoint 9 during construction activities | Moderate adverse (significant) | None | Moderate adverse (significant) | St/ T/ D |
| Operation | Impact on visual amenity footpath users at Viewpoint 9 during operation | Moderate adverse (significant) | None | Moderate adverse (significant) | Lt/ T/ D |
| Decommissioning | Impact on visual amenity footpath users at Viewpoint 9 during decommissioning activities | Moderate adverse (significant) | None | Moderate adverse (significant) | St/ T/ D |
| Chapter 12: Geology, Hydrology and Contaminated Land | | | | | |
| Construction | No significant effects identified | | | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 13: Cultural Heritage | | | | | |
| Construction | No significant effects identified | | | | |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|---|---|--|---|--|---|
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 14: Water Resources, Flood Risk and Drainage | | | | | |
| Construction | Change to the impermeable area within the Site, and associated changes to surface water flows resulting in adverse effects on flood risk and drainage | Moderate adverse (significant) | Directing runoff to an attenuation pond with controlled outfall, to limit discharge into the drainage network to greenfield rates | Minor adverse (not significant) | St/ T/ D |
| Operation | Change to the impermeable area within the Site, and associated changes to surface water flows resulting in adverse effects on flood risk and drainage | Moderate adverse (significant) | Directing runoff to an attenuation pond with controlled outfall, to limit discharge into the drainage network to greenfield rates | Minor adverse (not significant) | Lt/ T/ D |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|-------------------------------------|---|--|---|--|---|
| Decommissioning | No significant effects identified | | | | |
| Chapter 15: Socio-Economics | | | | | |
| Construction | Net employment generated during construction. | Major beneficial (significant) | None required but a 'meet the buyer' event will be held to improve opportunities for local residents and businesses | Major beneficial (significant) | St/ P/ D |
| Operation | Net employment generated during operation. | Moderate beneficial (significant) | None required but a careers fair will be held to improve opportunities for local residents | Moderate beneficial (significant) | Lt/ P/ D |
| Decommissioning | No significant effects identified | | | | |
| Chapter 16: Waste Management | | | | | |
| Construction | No significant effects identified | | | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|--|---|--|---|--|---|
| Chapter 17: Cumulative and Combined Effects | | | | | |
| Construction | Cumulative impact on visual amenity for visitors/ customers to Viewpoint 5: Beechwood Farm Carvery during construction of Proposed Development and Sustainable Transport Fuels Facility | Moderate adverse (significant) | None | Moderate adverse (significant) | St/ T/ D |
| Construction | Cumulative impact on visual amenity for visitors/ customers to Viewpoint 9: Middle Drain Public Right of Way (PRoW) during construction of | Major adverse (significant) | None | Major adverse (significant) | St/ T/ D |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|-------------------|--|--|---|--|---|
| | Proposed Development and Sustainable Transport Fuels Facility | | | | |
| Operation | Cumulative impact on visual amenity for visitors/ customers to Viewpoint 5: Beechwood Farm Carvery during operation of Proposed Development and Sustainable Transport Fuels Facility | Moderate adverse (significant) | None | Moderate adverse (significant) | Lt/ T/ D |
| Operation | Cumulative impact on visual amenity footpath users remains at | Major adverse (significant) | None | Major adverse (significant) | Lt/ T/ D |

| DEVELOPMENT STAGE | ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND IMPACT AVOIDANCE MEASURES) | CLASSIFICATION OF EFFECT PRIOR TO MITIGATION | MITIGATION/ ENHANCEMENT (IF IDENTIFIED) | CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION | NATURE OF EFFECT(S) (LT/ MT/ ST AND P/ T AND D/ IN) |
|--|---|--|---|--|---|
| | Viewpoint 9 during operation of Proposed Development and Sustainable Transport Fuels Facility | | | | |
| Chapter 18: Human Health | | | | | |
| Construction | No significant effects identified | | | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |
| Chapter 19: Sustainability and Climate Change | | | | | |
| Construction | No significant effects identified | | | | |
| Operation | No significant effects identified | | | | |
| Decommissioning | No significant effects identified | | | | |

Note: Lt = long term, Mt = medium term, St = short term, P = permanent, T = temporary, D = direct and In = indirect.

20.3 Comparison of Proposed Development and Consented Development Effects

20.3.1 The assessments presented in Chapters 7 to 19 each included a comparison of the effects of the Proposed Development against the effects of the Consented Development, in order to identify any additional effects arising from the Additional Works. The Proposed Development is assessed to have no additional significant environmental effects compared to the Consented Development.