Replacement Essex Minerals Local Plan 2025 to 2040 - Regulation 18 - Issues and Options

Habitats Regulations Assessment Screening Report

February 2024

Essex County Council

About us

Place Services is a leading public sector provider of integrated environmental assessment, planning, design and management services. Our combination of specialist skills and experience means that we are uniquely qualified to help public organisations meet the requirements of the planning process, create practical design solutions and deliver environmental stewardship.

Our Natural Environment Team has expertise of arboriculture, biodiversity, countryside management and ecology. This multidisciplinary approach brings together a wide range of experience, whether it is for large complex briefs or small discrete projects. We aim to help our clients protect and improve the natural environment through their planning, regulatory or land management activities. This approach ensures not only that our clients will fulfil their legal duties towards the natural environment, but they do so in a way that brings positive benefits to wildlife and people.

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Version	Date	Authors	Description of changes
1.0	January 2024	Emma Simmonds and Sue Hooton	Drafted / Reviewed internally / Issued Revised due to proposed changes to Essex RMLP since previous HRA was undertaken in 2021. Preferred Sites removed. Submitted Sites included.
1.1	January 2024	Hamish Jackson	Review
1.2	February 2024	Emma Simmonds Sue Hooton	Revised in view of comments from Minerals and Waste team

Title of report	Replacement Essex Minerals Local Plan 2025 to 2040 Regulation 18 - Issues and Options Habitats Regulations Assessment Screening Report February 2024
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Glossary

AA	Appropriate Assessment
AEOI	Adverse Effect on Integrity (of Habitats sites)
AMR	Annual Monitoring Report
CEMP	Construction Environment Management Plan
CLEUD	Certificate of Lawful Existing Use or Development
EA	Environment Agency
EMS	European Marine Site
EU	European Union
HRA	Habitats Regulations Assessment
Ha	Hectares
IROPI	Imperative Reasons of Overriding Public Interest
IRZ	Impact Risk Zone
Km	Kilometre
LPA	Local Planning Authority
LTP	Local Transport Plan
LSE	Likely Significant Effect
MAGIC	Multi Agency Geographic Information about the Natural Environment
RMLP	Replacement Minerals Local Plan
NE	Natural England
NPPF	National Planning Policy Framework
NSIP	Nationally Strategic Infrastructure Project
SAC	Special Area of Conservation
SACO	Supplementary Advice on Conservation Objectives
SIP	Site Improvement Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Executive Summary

This Habitats Regulations Assessment (HRA) screening report has been prepared by Place Services for the draft Replacement Essex Minerals Local Plan 2025- to 2040 (Regulation 18 - Issues and Options) February 2024 and the assessment of 52 Submitted Sites, prepared for Regulation 18 consultation by Essex County Council.

This HRA report enables Essex County Council to comply with Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (as amended). It updates the Habitats Regulations Assessment for the Essex Minerals Local Plan Adopted July 2014 (as amended 2021), prepared by Place Services in 2021, which should be read in conjunction with this HRA screening report, prepared in 2024.

The draft Replacement Essex Minerals Local Plan 2025 to 2040 does not propose any Preferred Sites at this stage. Following the Call for Sites, the suitability of all Submitted Sites has been assessed. The results of these site assessments have been published in the Assessment of Candidate Sand and Gravel Sites report, as part of the Regulation 18 public consultation alongside the full Replacement Minerals Local Plan 2025 to 2040 (hereon in referred to as the RMLP), and associated evidence base, which can be found on the ECC website.

This HRA report undertaken in 2024 (hereon in referred to as the HRA 2024), provides the first HRA stage of assessment only – i.e., screening - due to the uncertainties surrounding the Essex RMLP, particularly in relation to sites.

This HRA 2024 has screened in a number of potential Likely Significant Effects upon Habitats sites (formerly known as European sites or Natura 2000 sites) which could arise as a result of the RMLP and cannot all be ruled out during the Screening stage. This is largely due to the current uncertainties surrounding the site allocations or because further consideration and possible mitigation is required, which cannot be considered until an Appropriate Assessment is undertaken (Stage 2). In line with the Court judgement (CJEU People Over Wind v Coillte Teoranta C-323/17), unembedded mitigation measures cannot be taken into account when carrying out a HRA screening assessment to decide whether a plan or project is likely to result in Likely Significant Effects on a Habitats site.

The 25 Habitats sites predicted to have Likely Significant Effect arising from the RMLP (without considering mitigation) are:

- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar
- Benfleet and Southend Marshes SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Epping Forest SAC

- Essex Estuaries SAC
- Foulness SPA and Ramsar site
- Hamford Water SPA, Ramsar site and SAC
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

The policies and Submitted Sites have been considered against the following potential connecting impact pathways, i.e. links between the RMLP and the qualifying features of the Habitats sites which could result in possible significant effects on these sites:

- Direct effects through land take
- Impact to features (qualifying species) outside the protected site boundary
- Increase in disturbance, including recreational disturbance
- Changes in water quality
- Changes to water quantity
- Changes in atmospheric pollution levels

These impact pathways have all been screened in to be considered further at Appropriate Assessment except for land take which was scoped out and water quantity which has screened out. There are no situations in the current version of the RMLP where direct use of land within any Habitats sites would be used for minerals extraction or primary or secondary processing. There are no Submitted Sites which are close enough to result in Likely Significant Effect arising from changes to the hydrology of the two Habitats sites scoped in with respect to Water Quantity, i.e. Epping Forest SAC and Lee Valley SPA and Ramsar site. Policy DM1 also provides embedded mitigation to avoid potential impacts on Habitats sites in relation to water quantity issues.

The RMLP now provides a general policy, i.e., DM1, which requires that there will be no adverse effect on the integrity of Habitats sites. This provides embedded mitigation for the RMLP, which should be read as a whole, and should avoid duplication because each policy needs to be considered for every planning application submitted. This is based upon inspectors' rulings for other local plans. Professional judgement has therefore been made that text stating the need to avoid adverse effects on integrity to Habitats sites is not needed to be repeated in every policy, providing that there is sufficient referencing and cross-referencing where deemed sufficiently important. As a result, several policies have been screened out that had previously been screened in. These include S5, S6, S8, S9, DM3 and DM4.

However, despite the embedded mitigation in DM1, there are still a number of other policies which need more consideration due to uncertainties and so may need to be brought to Appropriate Assessment for Regulation 19 of the RMLP. The policies screened in for assessment are set out below:

- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel Extraction
- P2: Preferred Site for Silica Sand Extraction

S11: Access and Transportation

Policy S11 is screened in due to concerns relating to air quality impacts from traffic upon Habitats sites. Air quality is a significant area of concern in terms of its impacts upon sensitive wildlife sites particularly in relation to the effect of NOx caused by vehicle emissions. The Predicted Environmental Concentration (PEC) of emissions resulting from the contribution of Policy S11 is unknown. The HRA (Appropriate Assessment) produced for the RMLP review in 2021 was not able to reach a conclusion on whether that RMLP could avoid any adverse effect on integrity on any Habitats sites, either alone or in combination with other plans and projects. The HRA in 2021 advised that detailed engagement with Natural England should be sought and further research was needed; this research is still required.

Epping Forest SAC in particular is in 'unfavourable' condition due to nitrogen deposition. While transport routes to and from any future minerals sites is not known, the Essex RMLP supports the London market and vehicles are therefore likely to be encouraged to use the M25 (in accordance with the RMLP's transport hierarchy), which passes adjacent to Epping Forest SAC. Furthermore, one of the Submitted Sites (A63: Patch Park, Abridge) is located 3.5km east of Epping Forest SAC.

Therefore, given the inability of the previous HRA 2021 to reach a conclusion on whether the RMLP 2021 could avoid any adverse effect on integrity, the need for additional research and liaison with Natural England, as well as current wider concerns surrounding air quality; specific concerns relating to the effects of air quality upon Epping Forest SAC, and the uncertainties due to the current lack of Preferred Sites, it would not be appropriate to screen out Policy 11 at this stage and we recommend that it is taken forward for further consideration at Appropriate Assessment, together with the air quality impact pathway.

S12: Mineral Site Restoration and After-Use

Policy S12 allows public access and recreation as an after use. Recreation is known to cause disturbance, particularly to birds, and many Habitats sites in Essex (SPAs and Ramsar sites) have bird interest and / or associated habitats which have the potential to be adversely affected by increased recreational pressure.

The recommended text made by the HRA 2021 for S12 is now included. However, recreation as an after use has been screened in with respect to Submitted Sites as some are in close proximity to Habitats sites. Furthermore, recreation as an after-use cannot be screened out for any non-allocated sites which come forward during the life of the RMLP as their locations are as yet unknown.

Therefore, S12 will be taken forward in order to consider restoration by recreation once

Preferred Sites are proposed at the next stage and more information may be available with respect to proposed restoration schemes.

P1: Preferred Sites for Sand and Gravel Extraction and P2: Preferred Sites for Silica Sand Extraction

P1 and P2 were automatically screened in due to the current lack of information about sites as there are no Preferred Sites at this stage. However, they were not considered in any more detail.

Submitted Sites

The 52 Submitted Sites have been assessed and those 31 screened in for further assessment are:

- A31: Maldon Road, Birch
- A49: Colemans Farm - Hill Broad Farm
- A50: Colemans Farm - Eastern extension (Appleford Farm)
- A51: Colemans Farm - North extension (Hill Broad Farm)
- A52: Colemans Farm - Southern extension
- A58: Little Smiths – Danbury
- A61: Heckfordbridge
- A62: Heckfordbridge
- A63: Patch Park, Abridge
- A64: Land East of Asheldham Quarry
- A65: Land South of Asheldham Quarry
- A66: White House Farm - Woodham Walter (A44)
- A67: Church Farm - Alresford (A16)
- A68: Crabtree Farm - Great Bentley
- A69: Frating Hall (A17)
- A71: Lodge Farm - Alresford (A19)
- A72: Martells - Southern extension
- A73: Martells – Western extension
- A74: Thorrington Hall Farm (A21)
- A79: Crown Quarry - North of Wick Lane
- A82: Colemans Farm - Elm Springs Extension
- A83: Colemans Farm - Hole Farm
- A84: Colemans Farm - Appleford Farm North Extension

- A85: Martells - North of Frating Road (East)
- A86: Martells - North of Frating Road (West)
- A87: Martells - East of Slough Lane
- A88: Gurnhams Farm
- A92: Land at Pattiswick Hall Farm - Small Site
- A93: Land at Pattiswick Hall Farm - Full Site
- A95: Land at Bellhouse Farm South
- D7: Land at Pond Farm (transhipment site)

There are a number of Submitted Sites which are located relatively close to Habitats sites. The nearest sites are A67: *Church Farm - Alresford (A16)*, A71: *Lodge Farm - Alresford (A19)* and A74: *Thorrington Hall Farm (A21)* which are all less than 500 metres from the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC. These generally have the highest potential to result in LSE from several impact pathways.

Fifteen Submitted Sites have been included as having the potential to support qualifying bird species using land outside of the Habitats sites for which they are listed. The key species considered were Brent Geese, Lapwing and Golden Plover and Hen Harrier though Lapwing and Golden Plover are the only two qualifying bird species which are likely to use suitable land beyond 2km from the coastal areas.

Three Submitted Sites have been considered to be close enough to have the potential to disturb qualifying features of the Colne Estuary SPA and Ramsar and Essex Estuaries SAC.

The issue of Air Quality is considered above, in the discussion for Policy S11 Access and Transportation, which is screened in due to concerns relating to air quality impacts from traffic upon Habitats sites. Four Submitted Sites have been screened in, alone or in combination with other plans and projects. One Submitted Site is located within 200 metres of the Colne Estuary SPA and Ramsar and Essex Estuaries SAC, i.e. A71: Lodge Farm - Alresford (A19). Two more Sites are within 500 metres of these Habitats sites.

The fourth Submitted Site is situated 3.5 km from Epping Forest SAC, which is known to be particularly affected by air pollution i.e. A63: Patch Park, Abridge. Epping Forest SAC which is in ‘unfavourable’ condition due to nitrogen deposition. Site A63 should be considered in combination with other plans and projects at Appropriate Assessment.

With respect to Water Quality, there are a number of Submitted Sites near to watercourses which feed into Salary Brook and the Roman River, both of which connect to the River Colne. Five sites are close enough for there to be potential for LSE (alone) and have hydrological connectivity to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC.

In addition, two sites are close enough to watercourses which feed into the Dengie SPA and Ramsar and Essex Estuaries SAC and two sites are near to watercourses which feed

into the Blackwater estuary. The water quality pathway is identified as needing to be taken forward to Appropriate Assessment.

Many other Submitted Sites have been assigned as being likely to result in non-significant impacts due to their spatial distribution and were then considered cumulatively with other Submitted Sites. Many are 10 -20 kilometres from the Colne Estuary SPA and Ramsar site or Blackwater SPA and Ramsar site and the Essex Estuaries SAC, so, while it is considered over precautionary to screen them in individually, they have been screened in for further assessment cumulatively, based on professional judgement. This includes eleven Submitted Sites situated within the River Blackwater valley and six Submitted Sites which connect to the Colne estuary. These Sites should be carried forward to be considered if they are being proposed as Preferred Sites at the next stage of the RMLP. At AA, mitigation measures may need to be considered such as the need for appropriate phasing across Preferred Sites, as well as strict measures during operations.

There are 31 Submitted Sites which have been identified in Table 9 as having the potential for in combination effects. The complete list of policies and Submitted Sites are set out within the Screening Tables 6 and 7 and in Appendix 1. Any elements requiring an in combination assessment will be undertaken at AA stage.

Thus, the range of potential effects arising from the RMLP upon the 25 Habitats sites has been considered and assessed. The HRA screening process has concluded that it is not currently possible to rule out the potential for Likely Significant Effects without further assessment, clarification or mitigation. The HRA 2024 report has indicated which Submitted Sites are likely to have the greatest effects and has screened out others. An Appropriate Assessment will not be required at this stage due to the level of uncertainty of the current version of the RMLP.

As part of the ongoing iterative process, the next version of the RMLP will need to be re-screened. If that HRA concludes that it is not possible to rule out the potential for Likely Significant Effects of any element of the RMLP, an Appropriate Assessment will be required under the Conservation of Habitats and Species Regulations 2017 (as amended) and changes to, or mitigation for, the policies and Sites aforementioned may be required. This will be undertaken before the RMLP is finalised to enable it to take account of the conclusions of the HRA.

It is then envisaged that the RMLP will proceed to a Regulation 19 consultation, where the revised HRA will form part of the evidence base. The final version of the RMLP may only be adopted after having ascertained that it will not result in adverse effects to any Habitats site, alone or in combination with other plans or projects.

1. Introduction

Purpose of this report

1.1. Place Services has been commissioned by Essex County Council to provide an updated Habitats Regulations Assessment (HRA) for the draft Replacement Essex Minerals Local Plan 2025 to 2040 (Regulation 18 – Issues and Options), in accordance with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).

1.2. This document will form part of the supporting evidence base for the RMLP and Natural England will be consulted upon it during the 'Regulation 18' public consultation in 2024 and any subsequent consultations.

1.3. The Habitats Regulations Assessment can be amended iteratively as part of the process of developing and refining the Essex Replacement Minerals Local Plan (RMLP). In 2021 Place Services provided a Habitats Regulations Assessment (Appropriate Assessment) for the emerging Regulation 18 Essex Minerals Local Plan (July 2014, as amended 2021) and this most recent report for 2024 reviews that report as part of the iterative process of assessing the emerging RMLP.

Background to Habitats Regulations Assessments

1.4. Habitats Regulations Assessments (HRAs) are a statutory requirement and should be undertaken by the competent authority to ensure that plans and projects comply with the Conservation of Habitats and Species Regulations 2017 (as amended). HRA is the process by which the requirements of the Regulations are implemented and ensures that plans or projects will not adversely affect Habitats sites (also known as European sites).

1.5. The Conservation of Habitats and Species Regulations 2017 (as amended) stem from the EU Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds) and the EU Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). Changes are made by the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 which came into force on 31 December 2020). While the UK is no longer within the EU, the Conservation of Habitats and Species Regulations 2017 (as amended) remain in place with only relatively minor changes which came into force on 31 December 2020. Parliament will however be at liberty to introduce future changes to the Conservation of Habitats and Species Regulations 2017 (as amended) since, after 31 December 2020, the UK is no longer bound by the EU Habitats and Wild Birds Directives. At the present time the position, under section 6(3) EU (Withdrawal) Act 2018 (as amended), is that the courts in the UK, with the sole exception of the Supreme Court, will continue to be bound by HRA judgements handed down by the CJEU and by domestic courts prior to 31 December 2020 when interpreting the Conservation of Habitats and Species

Regulations 2017 (as amended). This is the case as long as the Conservation of Habitats and Species Regulations 2017 (as amended) remain unmodified by Parliament.

1.6. This report addresses Regulation 63 of Habitats Regulations 2017 which covers the first stage, i.e., HRA Screening. This HRA has also been undertaken following the recommended approach in the DTA Publications Handbook[1].

1.7. The Conservation of Habitats and Species Regulations 2017 (as amended) require the competent authority to undertake a HRA before making a decision about permission for any plan or project that may result in an adverse effect on the integrity of a Habitats site[2] as defined in the National Planning Policy Framework (NPPF, 2023).

1.8. In line with the Court judgement (CJEU People Over Wind v Coillte Teoranta C-323/17), mitigation measures cannot be taken into account when carrying out a HRA Screening assessment to decide whether a plan or project is likely to result in significant effects on a Habitats (European) site. As the policies relate to land within the Impact Risk Zones (IRZs)[3] for a number of Habitats Sites, it is not possible to rule out Likely Significant Effects, without mitigation in place.

1.9. The Court judgement (CJEU Holohan C- 461/17) now imposes more detailed requirements on the competent authority at Appropriate Assessment stage:

> 1. […] an 'Appropriate Assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.
>
> 2. […] the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

[1] The DTA Publications Handbook can be found at www.dtapublications.co.uk

[2] Habitats Site: Any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 (as amended) for the purpose of those regulations and those listed in paragraph 187 of the NPPF (2023). This includes potential Special Protection Areas and possible Special Areas of Conservation; listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on Habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

[3] Impact Risk Zones are geographical zones mapped around each statutory designated wildlife site which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. More details can be found here: https://data.gov.uk/dataset/5ae2af0c-1363-4d40-9d1a-e5a1381449f8/sssi-impact-risk-zones-england

3. […] where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'Appropriate Assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.

1.10. This HRA report provides (plan level) Stage 1 HRA Screening as required by Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (as amended).

1.11. Requirements are set out within Regulations 63 and 64 of the Conservation of Habitats and Species Regulations 2017 (as amended), where a series of steps and tests are followed for plans or projects that could potentially affect Habitats sites. The steps and tests set out within Regulations 63 and 64 are commonly referred to as the 'Habitats Regulations Assessment' process.

1.12. Plans and projects should only be permitted when it has been proven that there will be no adverse effects on the integrity of Habitats sites. The legislation can allow projects that may result in negative impacts on the integrity of a site if the competent authority is satisfied that, there are no alternative solutions, the plan or project must be carried out for Imperative Reasons of Overriding Public Interest (IROPI) (Regulation 64). However, this will require suitable compensation to ensure that the overall coherence of the series of Habitats sites is retained.

1.13. The HRA should be undertaken by the 'competent authority' and Place Services has been commissioned to complete this on behalf of Essex County Council.

1.14. It is not considered that there are any serious limitations to this HRA, except for the absence of specialist advice on assessment of air quality impacts on Epping Forest SAC.

Consultation with Natural England

1.15. The HRA also requires close working with Natural England as the statutory nature conservation body.

1.16. Natural England is the statutory nature conservation body for HRA, where it can assist in obtaining the necessary information, help agree the process (such as the selection of sites and the scope of the appraisal) and work with the competent authority on agreeing the outcomes and mitigation proposals. Essex County Council must consult Natural England, and have regard to its advice, under provision 105 (2) of the Habitats Regulations.

1.17. In advance of seeing the HRA from 2021, Natural England provided the following interim advice on 7th January 2021:

"You may find it helpful to review the linked guidance note here *Natural England's approach to advising competent authorities on the assessment of road traffic*

emissions under the Habitats Regulations - NEA001 if not already done so. This would be our starting point for the assessment.

If the HRA work undertaken so far has identified air quality as a Likely Significant Effect, the usual assessment steps in the guidance should be followed. Please be aware that currently the M25 section closest to Epping Forest SAC is under particular scrutiny at present due to the uplift anticipated linked to the Lower Thames Crossing NSIP, and so the in-combination assessment will be important. Presumably traffic modelling work will help to identify the 'affected road network' and this will be helpful for assessment purposes."

1.18. Natural England will be consulted upon this HRA report for 2024.

The Minerals Local Plan

1.19. Reviewing a Minerals Local Plan is required under the National Planning Policy Framework (NPPF 2023). It states that policies in local plans and spatial development strategies should be reviewed to assess whether they need updating at least once every five years.

1.20. The adopted Essex Minerals Local Plan 2014 was reviewed in 2021. The approach since then has since been changed in order to extend the Plan period. Updates have been made throughout to refer to the new approach to reviewing the Plan and the new Plan period up to 2040. To support the production of this Plan, Call for Sites consultations were undertaken in March and September 2022.

1.21. The suitability of all Submitted Sites has been assessed. The results of all of these site assessments have been published as part of the Regulation 18 public consultation in the Assessment of Candidate Sand and Gravel Sites report alongside the full draft *Replacement Essex Minerals Local Plan 2025 to 2040 (Regulation 18 - Issues and Options), February 2024* and associated evidence base. This can be found on the Essex County Council website.

1.22. The representations received will inform the next stage of production for the Plan. There are no Preferred Sites at this Regulation 18 consultation stage; the Council is currently assessing Submitted Sites and remaining undeveloped allocations from the 2014 RMLP to determine which sites should be selected as site allocations in the RMLP. Following the consultation, representations will be taken into account and amendments will be made to update the Assessment of Candidate Sand and Gravel Sites report. The individual assessments of the candidate sites will be updated as necessary in light of the comments received. The re-graded assessment will then inform the selection of sites to be proposed for allocation within the next Regulation 19 public consultation version of the RMLP.

1.23. The plan-period will cover the years from 2025 and 2040 inclusive.

1.24. The draft Replacement Essex Minerals Local Plan 2025 to 2040 (hereon in referred to as the RMLP) comprises an important part of the 'Development Plan' in

Essex, for it sets out how Essex County Council will provide for future mineral needs – through local planning policies and land allocations - and provides the basis on which future planning applications for minerals development will be considered and determined. This provides greater certainty for both local communities and the minerals industry as to where future minerals development might take place.

1.25. In Essex, the key minerals found and worked are sand and gravel, silica sand, brick clay, and chalk, and all are worked at surface level. There are no underground mines in the County. Minerals development differs from other forms of development because minerals can only be worked where they occur. There are also brickearth deposits in Essex, but these are not currently worked

1.26. The minerals development covered by the Plan includes:

- Mineral working' or 'mineral extraction' i.e. the quarrying of mineral;
- Mineral Infrastructure' i.e. the facilities that support the extraction and distribution of minerals, such as transhipment facilities (rail aggregate depots and coastal wharves), facilities for aggregate recycling, and secondary processing facilities (such as coated roadstone and concrete/mortar batching plant);
- Other ancillary development, such as site offices and weighbridges

1.27. It is proposed that the RMLP will consist of 12 strategic policies, two Preferred Sites policies and two development management policies.

1.28. The character of Essex, policy and guidance, the evidence base and consultation feedback has resulted in the Spatial Portrait and key issues for minerals planning. This provides a picture of how mineral and mineral related development will be provided in Essex during the period up to 2025 to 2040. The strategic priorities to achieve this aim are set out in Part 3.0.-The Spatial Vision is broken down into eight aims comprised of thirteen Strategic Objectives. Part 4.0 sets out The Approach to Identifying Preferred Mineral Sites for Primary Mineral Extraction and will eventually include the Preferred Sites, although these are not currently included. Part 5.0 sets out the development management policies and Part 6.0 sets out the details for implementation, monitoring and review.

Habitats Regulations Assessment for the Replacement Essex Minerals Local Plan 2025 to 2040

1.29. The Habitats Regulations Assessment prepared by Place Services for the RMLP in 2024 is entitled Replacement Essex Minerals Local Plan 2025 to 2040 *Regulation 18 - Issues and Options, Habitats Regulations Assessment Screening Report, February 2024.*

1.30. A previous Habitats Regulations Assessment prepared by Place Services in 2021 entitled Habitats Regulations Assessment For the Essex Minerals Local Plan, Adopted July 2014 (as amended 2021) Essex County Council March 2021. This document should be read in conjunction with this HRA screening report for 2024.

1.31. Regular discussions have been held between the authors of the RMLP and this HRA.

Minerals Activities and Associated Effects

1.32. Extraction of materials (e.g. sand and gravel, clay or chalk) can cause a variety of effects upon the environment- including Habitats sites - if unmitigated.

1.33. Any land take within a Habitats site is likely to have a direct adverse impact upon site integrity through habitat loss or degradation. The impact may also relate to non-designated habitat features, i.e. land that is functionally linked to a Habitats site. For example, arable fields may be used for foraging and roosting by qualifying bird species (e.g. Brent Geese).

1.34. Partial and full restoration of extraction sites can be positive for nature conservation and has the potential to improve Habitats sites through increasing the robustness of sites. This could be either through enhancing buffers or improving the connectivity of sites. It can also result in the extension to existing sites or the creation of new sites to support Habitats site features.

1.35. Extraction can change the hydrology of the local area, which can adversely affect any habitats nearby that are susceptible to changes in water levels.

1.36. Air pollution from vehicles and plant machinery can result in deposition of pollutants on vegetation, ill-health in trees and changes in assemblages of species, such as lichens. The impacts of nitrogen and nitrogen oxides deposition on vegetation growth are of particular concern. Other pollutants include sulphur dioxide, ammonia, ozone and particulates.

1.37. Dust from extraction and on-site operations may also have an impact on habitats and species. Impacts can occur within and beyond the site. There is potential for dust to affect the growth of plants or enter water sources.

1.38. Noise and light pollution from extraction, ancillary facilities, transportation, and some types of restoration may impact upon fauna such as bats and birds.

1.39. Wetland habitats are particularly vulnerable to pollution from surface or ground water sources.

1.40. Contamination of habitats may occur from a number of sources. Impacts may include reductions in prey species with subsequent impacts on the food chain, bioaccumulation of toxins in the food chain or eutrophication.

1.41. Contaminants can be transported large distances within surface or ground water. Impacts may depend on the strength of the pathway between the source and the

site. Pollution or contamination of watercourses during initial ground investigation works (e.g. boreholes) may provide pathways for contaminated water.

1.42. Operational activities may cause effects by disturbing previously contaminated aggregates; through the transport of aggregates; industrial processes on site (especially processing of fuels, oils and solvents). Dewatering may bring in contaminated water from off-site.

Habitats (European) Sites

1.43. Habitats sites is the term used by the NPPF (2023) to describe the internationally important sites within the National Network of Sites of nature protection areas in the UK. The aim of this network is to assure the long-term survival of UK's most valuable and threatened species and habitats.

1.44. Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and wetlands of International Importance (Ramsar sites) are part of the Habitats (Sites) network in the UK. This is because all SPAs and SACs are comprised of Sites of Special Scientific Interest (SSSIs) and all Ramsar sites in England are SSSIs. Together, SPAs, SACs and Ramsar sites make up the Habitats sites in the UK.

1.45. The following table offers a description and explanation of SPAs, SACs and Ramsar sites. Sites that are being considered for designation referred to as candidate SACs or proposed SPAs will also be included for the purposes of an HRA.

Table 1: Description and Explanation of SPAs, SACs and Ramsar sites

Special Protection Area (SPA)
SPAs are areas which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds found within EU countries. Example: Benfleet and Southend Marshes SPA is an estuarine area on the Essex side of the Thames Estuary and supports a diverse flora and fauna, including internationally important numbers of wintering waterfowl. *Legislation: The Conservation of Habitats and Species Regulations 2017 (as amended).*
Special Area of Conservation (SAC)
SACs are areas designated to protect habitat types that are in danger of disappearance, have a small natural range, or are highly characteristic of the region; and to protect species that are endangered, vulnerable, rare, or endemic. Example: Essex Estuaries SAC has Atlantic salt meadows, mudflats, and sandflats. *Legislation: The Conservation of Habitats and Species Regulations 2017 (as amended)*.

Ramsar sites (Wetlands of International Importance)

Ramsar sites are designated to protect the biological and physical features of wetlands, especially for waterfowl habitats. For example, Benfleet and Southend Marshes Ramsar site is important due to bird assemblages of international importance in winter and spring. Ramsar sites often overlap with SACs and SPAs and UK planning policy determines that they should be accorded the same importance when developments are proposed. Legislation: Ramsar Convention (1971) – Wetlands of International Importance.

2. Methodology

Habitats Regulations Assessment Process

2.1. The legislation does not require a fixed method, but case law has shaped the way it should be undertaken. The HRA is a sequential process and it is generally divided into four stages, which are set out below in Figure 1. Each of the stages contains a number of sequential steps, comprising the tests or procedures required by the Conservation of Habitats and Species Regulations 2017 (as amended).

2.2. This HRA includes the first sequential stage, i.e., screening. The four stages are outlined here and Stage 1 is explored in further detail below.

Stage 1 - Screening

2.3. The process identifies whether a Plan, either alone or in combination with other plans or projects, is likely to have a significant effect on a Habitats site. Current guidance on HRA recommends that the screening stage should comprise the following elements:

- Determining whether the Plan is directly connected with or necessary to the management of the site – if it is then no further assessment is necessary,
- Identify Habitats (European) sites in and around the Plan area,
- Review the policies and proposals in the Plan and consider the potential effects on Habitats (European) sites (magnitude, duration, location, extent),
- Examine other plans and projects that could, 'in combination', have the potential to have significant effects on a Habitats (European) site,
- Produce screening assessment – record of screening analysis.

2.4. The screening exercise should be approached on a precautionary basis. If the screening stage concludes that there are likely to be no significant impacts on Habitats (European) sites, then there will be no need to progress to Stage 2. If effects are judged likely or uncertain, the precautionary principle is applied, and the Plan is considered under Stage 2.

Stage 2 - Appropriate Assessment (AA)

2.5. Where a plan may cause Likely Significant Effects, the second stage is to undertake an 'Appropriate Assessment' of the implications of the Plan (either alone or in combination with other plans or projects) and establish whether there

may be an Adverse Effect on Integrity (AEOI) of any Habitats sites in view of their Conservation Objectives.

2.6. An AA assesses the impacts of the proposed plan against the conservation objectives of the qualifying features of the relevant Habitats sites. Should the AA identify adverse effects, then alternatives, such as changes to the Plan, should be examined to avoid any potential damaging effects. If no alternative exists, mitigation measures are identified and evaluated.

2.7. Some policies of a plan can be used to mitigate some of the potential Likely Significant Effects identified. These can be considered at Appropriate Assessment. This stage thus becomes an iterative process as avoidance and reduction measures can be incorporated in order to be able to ascertain that there is no Adverse Effect on Integrity on any Habitats site, before making a final assessment.

2.8. Appropriate Assessment should be undertaken by the competent authority and should assess every aspect of the Minerals Local Plan which can by itself, or in combination with other plans and projects, affect the Habitats sites' Conservation Objectives. The assessment must consider the implications for each qualifying feature of each potentially affected Habitats site.

2.9. If effects remain after all alternatives and mitigation measures have been considered, the HRA proceeds to Stage 3.

Stage 3 - Assessment of Alternative Solutions

2.10. A HRA only moves to Stage 3 when significant effects on the integrity of Habitats sites remain, following the consideration of alternatives and development of mitigation measures in Stage 2.

Stage 4 - Imperative Reasons of Overriding Public Interest and Compensatory Measures

2.11. Stage 4 involves the process of identifying 'imperative reasons of overriding public interest' ('IROPI'). It must demonstrate that no alternatives exist and identify potential *compensatory* measures. This stage is a last resort and should be avoided if at all possible. If significant negative effects remain, a Plan may only be adopted under such circumstances if there are imperative reasons of overriding public interest, where it is deemed that the Plan should proceed.

Figure 1: Outline of the Four Stage Approach to the Assessment of Plans under the Habitats Regulations (taken from the DTA handbook)

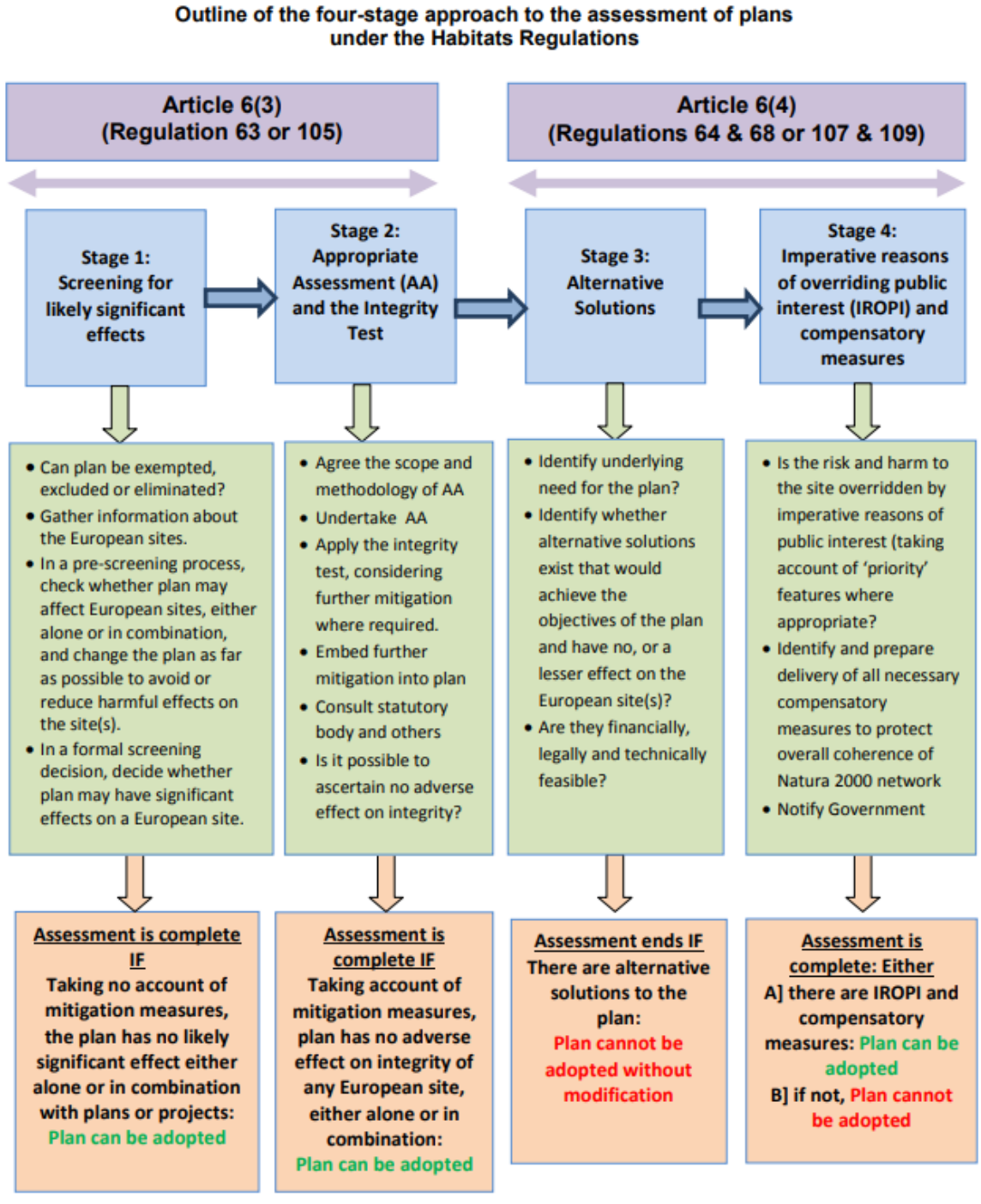


Table 2. Stages of the Habitats Regulations Assessment Process

Stage	Tasks	Outcome
Stage 1 HRA Screening (Regulation 63)	- List the policies and Submitted Sites. - Identify potential effects to a Habitats site from the Local Plan. - Assess if any significant effects on a Habitats site from the Plan, either alone or in combination, with other plans or projects.	Where significant effects are unlikely, prepare a 'finding of no significant effect' report and Local Plan can be adopted. Where significant effects are judged likely, either alone or in combination or there is a lack of information to prove otherwise, go to Stage 2. *People over Wind CJEU ruling (April 2018) means that it is not possible to consider mitigation measures when screening for impacts.*
Stage 2 Appropriate Assessment (Regulation 63)	- List policies and allocations within scope. - List Habitats sites within scope. - Set out methodology of the AA and agree with Natural England. - Assess the implication of the policies and allocations against the designated features and species not listed but which could be using the habitat features. - Apply the integrity test. - Where there may be adverse effects on the ecological integrity of Habitats sites, in view of the Site's conservation objectives, consider mitigation measures. - Ensure mitigation is embedded into the Local	If no adverse effect on site integrity either alone or in combination, the Local Plan can be adopted. If it is not possible to ascertain no adverse effect on site integrity, go to Stage 3. Holohan CJEU ruling (November 2018) now imposes more detailed requirements on the competent authority at Appropriate Assessment stage.

Stage	Tasks	Outcome
	Plan. - Assess in combination effects with other plans and projects. - Reapply the integrity test. Where there may be adverse effects on the ecological integrity of Habitats sites, in view of the Site's conservation objectives, consider mitigation measures. - Formally Consult Natural England.	
Stage 3 Assessment of alternative solutions (Regulation 64)	- Identify whether alternative solutions exist that would achieve the objectives of the Local Plan and have no or a lesser effect on the integrity of a Habitats site(s). - If effects remain after alternative solutions have been considered, consider whether the policies and/or projects should proceed with modification or the policies (and projects) be removed from the Local Plan.	If there are alternative solutions to the Local Plan, it cannot be adopted without modification. If not financially, legally, or technically viable alternatives exist, go to Stage 4.
Stage 4 IROPI (Regulation 64)	- Consider if the risk and harm to the Habitats site is over-ridden by Imperative Reasons of Over-riding Public Interest. - Identify and prepare delivery of compensatory measures to protect the overall coherence of the UK national network and notify Government.	If there are IROPI and compensatory measures, the Local Plan can be adopted If there are no IROPI the Local Plan cannot be adopted.

Screening Methodology- Assessment of Likely Significant Effects

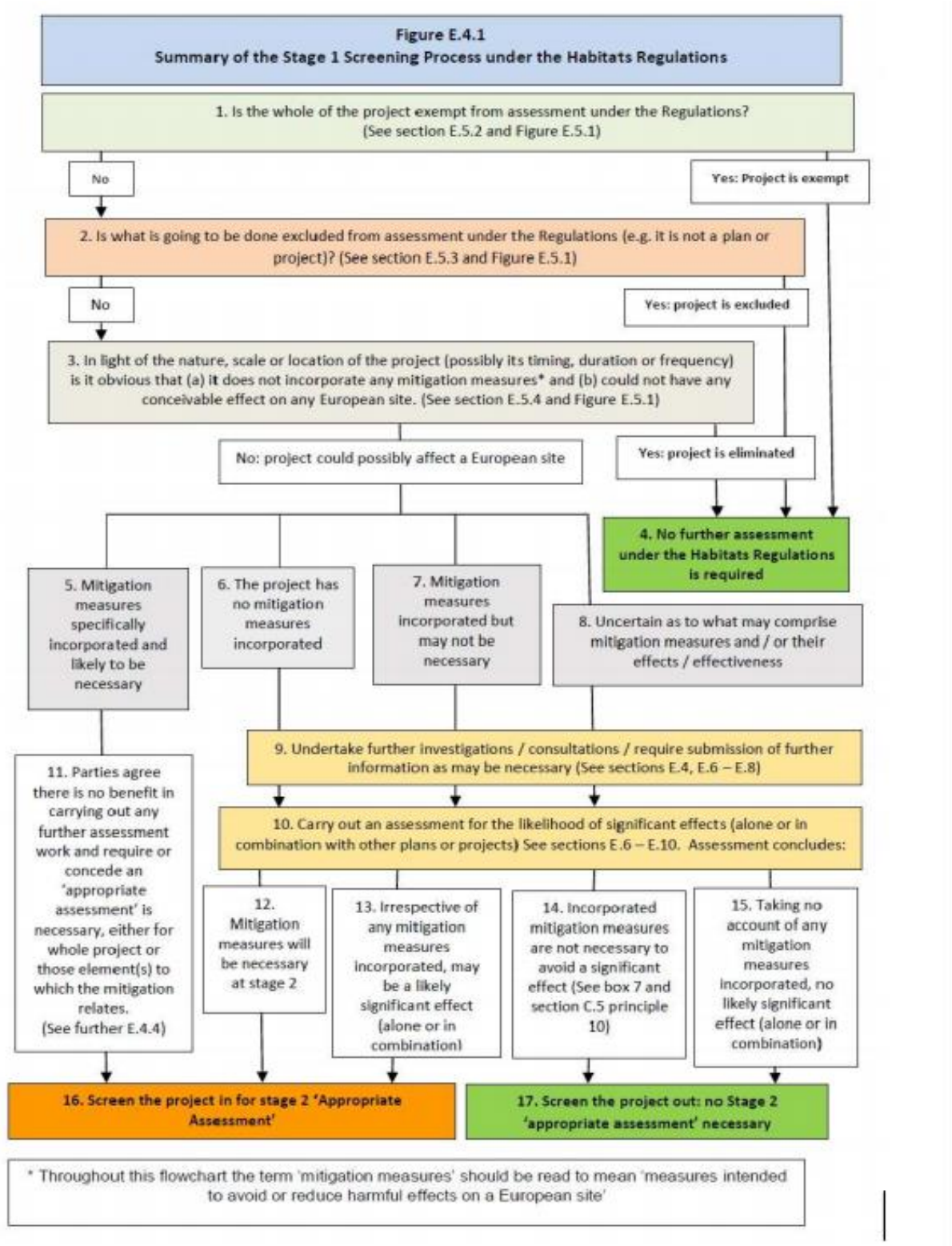
2.12. A summary of the screening process is set out in Figure 2 below. The screening stage of an HRA identifies whether the RMLP may result in a Likely Significant Effect to any Habitats site, alone or in combination with other plans or projects. The screening process should identify all aspects of the RMLP that:

- Are exempt from assessment
- Are excluded from assessment
- Are eliminated from further assessment
- Have no Likely Significant Effects, alone or in combination with other plans or projects and therefore be screened out
- Are screened in as it is not possible to rule out Likely Significant Effects. In line with the 2018 Court judgment (CJEU People Over Wind v Coillte Teoranta C-323/17) mitigation measures cannot be taken into account when carrying out a screening assessment. Consequently, any aspect of the Local Plan which cannot be ruled out as having Likely Significant Effects should continue to Stage 2 Appropriate Assessment.

2.13. The RMLP requires an HRA for the following reasons:

Reason	Determination
Can the plan be exempt?	No, the RMLP is not directly connected with or necessary for the management of any Habitats sites.
Can the plan be excluded?	No, the RMLP cannot be excluded as it falls within the definition of being a plan within the Habitats Regulations.
Can the plan be eliminated?	No, the RMLP as a whole cannot be eliminated as it proposes a number of policies and Submitted Sites which may result in a Likely Significant Effect on one or more Habitats sites.

Figure 2: Summary of the Stage 1 Screening Process under the Habitats Regulations



Extract from *The Habitats Regulations Assessment Handbook*, www.dtapublications.co.uk

2.14. Plans should not contain proposals that would be vulnerable to failure under the Habitats Regulations at project assessment stage, as this would be regarded as 'faulty planning'.

2.15. '*Significant effects'* have been defined through case law. A significant effect is any effect that would undermine the conservation objectives for the qualifying features of Habitats sites potentially affected, alone or in combination with other plans or projects. There must be a *causal connection,* or link, between the plan and the qualifying features of the site(s) which could result in possible significant effects on the site(s). Effects may be direct or indirect and a judgement must be taken on a case-by-case basis. The decision as to whether or not a potential impact is significant depends on factors such as: magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. So, what may be significant in relation to one site may not be in relation to another.

2.16. An effect which is not significant can be described as *'insignificant* ', '*de minimis*' or '*trivial*'- i.e. it would not undermine the conservation objectives.

2.17. A risk-based approach involving the application of the precautionary principle has been used in the assessment. A conclusion of 'no significant effect' is only reached where it is considered very unlikely, based on current knowledge and the information available, that a proposal in the RMLP would not have a significant effect on the integrity of a Habitats site.

2.18. Key guidance and background information has come from the following sources:

- DTA Publications Handbook: https://www.dtapublications.co.uk/ (under subscription);
- Review of the Plan in 2021.
- Essex County Council Replacement Minerals Local Plan: Pre Submission Replacement -Habitats Regulations Assessment, November 2012 (prepared by URS), undertaken to support the Essex Minerals Local Plan 2014. It is hereafter referred to as the '2012 HRA'. This document also refers to an earlier iteration, i.e. Habitats Regulations Assessment - Appropriate Assessment Report by Scott Wilson, dated October 2010
- Government information regarding Habitats sites and their 'zones of influence', e.g. www.magic.gov.uk
- Extensive experience of producing other HRAs.

The Replacement Essex Minerals Local Plan 2025 to 2040

2.19. The changes being proposed to the RMLP Regulation 18 stage consultation have been assessed as to whether the changes to these proposals may create the potential to cause any likely significant effect to any Habitats site.

2.20. In addition, the RMLP has been checked to ensure that it is up-to-date with respect to current relevant legislation, national policy, guidance and case law for Habitats sites. Examples are:

- Updates to Habitats/ international wildlife sites. Habitats sites designated since 2012 are all marine, i.e. Outer Thames Estuary Marine SPA; Margate and Long Sands SAC and Southern North Sea SAC, with the exception Hamford Water; this site is an SAC, though has been designated as an SPA and Ramsar since 1993.
- Relevant updates to HRA case law.

2.21. Since the current Essex MLP was adopted in 2014, many of the Preferred Sites have already been granted planning permission and have started operating.

2.22. To provide for the mineral requirements, the RMLP for 2025 to 2040 will allocate new sites for sand and gravel and silica sand extraction through Policies P1 (sand and gravel) and P2 (silica sand) of the RMLP. However, it has not yet been determined which sites should be allocated for future minerals extraction, therefore, Policies P1 and P2 are not presented within this Regulation 18 version of the RMLP. The RMLP explains that "*An update will act to remove those sites listed as allocated preferred sites which have been granted planning permission since the RMLP was adopted. Sites allocated but where planning permission has yet to be granted will be retained, provided the allocation is carried forward into the future Plan, and the Appendix will be supplemented with pro-formas for additional sites that are proposed for allocation*."

2.23. All parts of the RMLP, except Submitted Sites (through the Call for Sites process), have been listed in Table 6 where they have been scoped or screened as appropriate. Table 7 provides the screening table for Submitted Sites which are being assessed through the Regulation 18 process.

2.24. In addition, elements of the RMLP that cannot possibly have any effect on site have been scoped out, e.g. introductory text or timing of the plan.

2.25. Policies are screened out where they would not result in development because they either set out criteria relating to development proposed under other policies, or are very general in nature, or they seek to protect the natural environment.

2.26. The following figure 3 provides a useful checklist of issues that could potentially be affected by the Plan. The appropriate elements of this list have been used in the HRA 2024 screening report.

Figure 3: Scanning and site selection for sites that could potentially be affected by the plan

Types of plan	Sites to scan for and check	Names of sites selected
1. All plans (terrestrial, coastal and marine)	Sites within the geographic area covered by or intended to be relevant to the plan	
2. Plans that could affect the aquatic environment	Sites upstream or downstream of the plan area in the case of river or estuary sites	
	Open water, peatland, fen, marsh and other wetland sites with relevant hydrological links to land within the plan area, irrespective of distance from the plan area	
3. Plans that could affect the marine environment	Sites that could be affected by changes in water quality, currents or flows; or effects on the inter-tidal or sub-tidal areas or the sea bed, or marine species	
4. Plans that could affect the coast	Sites in the same coastal 'cell', or part of the same coastal ecosystem, or where there are interrelationships with or between different physical coastal processes	
5. Plans that could affect mobile species	Sites whose qualifying features include mobile species which may be affected by the plan irrespective of the location of the plan's proposals or whether the species would be in or out of the site when they might be affected	
6. Plans that could increase recreational pressure on European sites potentially vulnerable or sensitive to such pressure	Such European sites in the plan area	
	Such European sites within an agreed zone of influence or other reasonable and evidence-based travel distance of the plan area boundaries that may be affected by local recreational or other visitor pressure from within the plan area	
	Such European sites within an agreed zone of influence or other evidence-based longer travel distance of the plan area, which are major (regional or national) visitor attractions such as European sites which are National Nature Reserves where public visiting is promoted, sites in National Parks, coastal sites and sites in other major tourist or visitor destinations	
7. Plans that would increase the amount of development	Sites in the plan area or beyond that are used for, or could be affected by, water abstraction irrespective of distance from the plan area	
	Sites used for, or could be affected by, discharge of effluent from waste water treatment works or other waste management streams serving the plan area, irrespective of distance from the plan area	
	Sites that could be affected by the provision of new or extended transport or other infrastructure	
	Sites that could be affected by increased deposition of air pollutants arising from the proposals, including emissions from significant increases in traffic	

Types of plan	Sites to scan for and check	Names of sites selected
8. Plans for linear developments or infrastructure	Sites within a specified distance from the centre line of the proposed route (or alternative routes), the distance may be varied for differing types of site / qualifying features and in the absence of established good practice standards, distance(s) to be agreed by the statutory nature conservation body	
9. Plans that introduce new activities or new uses into the marine, coastal or terrestrial environment	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the new activities proposed by the plan	
10. Plans that could change the nature, area, extent, intensity, density, timing or scale of existing activities or uses	Sites considered to have qualifying features potentially vulnerable or sensitive to the effects of the changes to existing activities proposed by the plan	
11. Plans that could change the quantity, quality, timing, treatment or mitigation of emissions or discharges to air, water or soil	Sites considered to have qualifying features potentially vulnerable or sensitive to the changes in emissions or discharges that could arise as a result of the plan	
12. Plans that could change the quantity, volume, timing, rate, or other characteristics of biological resources harvested, extracted or consumed	Sites whose qualifying features include the biological resources which the plan may affect, or whose qualifying features depend on the biological resources which the plan may affect, for example as prey species or supporting habitat or which may be disturbed by the harvesting, extraction or consumption	
13. Plans that could change the quantity, volume, timing, rate, or other characteristics of physical resources extracted or consumed	Sites whose qualifying features rely on the non-biological resources which the plan may affect, for example, as habitat or a physical environment on which habitat may develop or which may be disturbed by the extraction or consumption	
14. Plans which could introduce or increase, or alter the timing, nature or location of disturbance to species	Sites whose qualifying features are considered to be potentially sensitive to disturbance, for example as a result of noise, activity or movement, or the presence of disturbing features that could be brought about by the plan	
15. Plans which could introduce or increase or change the timing, nature or location of light or noise pollution	Sites whose qualifying features are considered to be potentially sensitive to the effects of changes in light or noise that could be brought about by the plan	
16. Plans which could introduce or increase a potential cause of mortality of species	Sites whose qualifying features are considered to be potentially sensitive to the source of new or increased mortality that could be brought about by the plan	

Identifying Habitats Sites, their Conservation Objectives and Qualifying Features

2.27. The qualifying features and conservation objectives of the Habitats sites, together with current pressures and potential threats, have been drawn from the Standard Data Forms for SACs and SPAs and the Information Sheets for Ramsar Wetlands as well as Natural England's Site Improvement Plans (SIP) and the most recent conservation objectives. An understanding of the designated features of each Habitats site and the factors contributing to its integrity has informed the assessment of the potential Likely Significant Effects of the Minerals Local Plan.

2.28. Key sources of the Habitats sites information were found at:

- JNCC: https://jncc.gov.uk/
- Site Designation features and Conservation Objectives- Designated Sites View: https://designatedsites.naturalengland.org.uk/
- Site Improvement Plans: https://publications.naturalengland.org.uk/category/4873023563759616
- MAGIC (the Multi Agency Geographic Information for the Countryside website): www.magic.gov.uk
- "Managing Natura 2000 sites- The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" sites_en#:~:text=Article%206%20of%20the%20Habitats,three%20main%20sets%20of%20provisions.

2.29. The RMLP has the potential to impact areas that are beyond the Plan's area boundary. As a starting point, a distance of 20km from the county boundary was used to identify Habitats Sites which could be affected by impacts relating to the RMLP; these are listed below. They include all Habitats sites within Essex and those within 20km of Essex, to take into account any windfall sites that may arise. These are listed in Table 3 below.

Table 3. Habitats Sites Within 20km of Essex Boundary

Site	Location
North Downs SAC	Kent
Staverton Park and the Thicks SAC	Suffolk
Queendown Warren SAC	Kent
Alde-Ore and Butley SPA, SAC and Ramsar	Suffolk

Site	Location
Orfordness and Shingle Street SAC	Suffolk
Devils Dyke SAC	Cambridgeshire, Suffolk
Wormley-Hoddesdon Park Woods SAC	Hertfordshire
Epping Forest SAC	Essex and Greater London
Hamford Water SPA, SAC and Ramsar	Essex
Essex Estuaries SAC	Essex
Peter's Pit SAC	Kent
Eversden and Wimpole Woods SAC	Cambridgeshire
Margate and Long Sands SAC	Kent
Outer Thames Estuary SPA	Essex, Kent, Norfolk, Suffolk
Foulness SPA and Ramsar	Essex
Medway Estuary and Marshes SPA	Kent
The Swale SPA and Ramsar	Kent
Thames Estuary and Marshes SPA and Ramsar	Essex, Southend and Kent
Dengie SPA and Ramsar	Essex
Benfleet and Southend Marshes SPA and Ramsar	Essex and Southend
Stour and Orwell Estuaries SPA and Ramsar	Essex, Suffolk
Colne Estuary SPA and Ramsar	Essex
Blackwater Estuary SPA and Ramsar	Essex
Deben SPA and Ramsar	Suffolk
Crouch and Roach SPA and Ramsar	Essex

Site	Location
Abberton Reservoir SPA and Ramsar	Essex
Lee Valley SPA and Ramsar	Essex, Greater London, Hertfordshire

Identifying potential effects to a Habitats Site from the Minerals Local Plan and Use of Impact Pathways

2.30. The wide range of potential impacts upon Habitats sites and the following potential pathways for unmitigated effects arising from minerals operations are grouped into categories, and these are summarised below:

- **Land take -** Direct or indirect impacts to a Habitats site causing habitat loss, degradation or fragmentation.
- **Impacts on protected species outside the designated site** - e.g. loss of functionally linked land (outside Habitats sites). The impact on site features (species) which travel outside the protected sites may be relevant where a development could result in effects on qualifying interest species within the Habitats sites, for example through the loss of feeding grounds for an identified species.
- **Disturbance or displacement** - Increase of any type of disturbance from the quarrying processes and after uses, such as those arising from dust, noise and lights, as well as from recreational use resulting from site restoration.
- **Water quality and quantity -** Changes in surface or ground water availability and water quality to water-dependent Habitats Sites e.g. changes in groundwater regimes due to gravel extraction, dewatering or discharges.
- **Air quality -** Changes in localised atmospheric pollution levels e.g. dust emissions or increased HGV traffic. Where the Habitats sites could be reached by prevailing wind.

2.31. During the Screening stage each policy is screened for Likely Significant Effects, based upon the above categories. Where it is not possible to rule out Likely Significant Effects without mitigation, it is necessary to progress to Appropriate Assessment stage.

2.32. There are many uncertainties associated with using trigger distances as there are very few standards available as a guide to how far impacts will travel. When considering the potential for effects on Habitats sites, distance itself is not a definitive guide to the likelihood or severity of an impact. There are other factors that will influence the relative distance at which an impact can occur, such as the

prevailing wind or river flow direction. This means that development proposed in a plan that is some distance away from a Habitats site could potentially affect the site, and therefore should be considered as part of HRA screening.

2.33. Rather than rely on distance alone, best practice is to use a 'source-pathway-receptor' model which focuses on whether there is a potential link or causal connection (pathway) from the source (the direct or indirect change occurring as a result of development) by which impacts from a plan can affect the vulnerabilities/sensitivities of a Habitats site's features to the predicted changes. The pathway is the route or mechanism by which any Likely Significant Effect would be manifest in the environment and would reach the receptor (i.e. the Habitats site). Therefore, during the screening stage a number of assumptions based on professional judgement have been applied in relation to assessing the Likely Significant Effects on Habitats sites that may result from the RMLP, as described below.

2.34. The risks of effects to occur are predicted in light of assumptions, limitations and confidence in predictions. Then, taking no account of the mitigation measures incorporated into the Plan, the potential effects on qualifying features are determined and assessed on whether they are likely to be 'significant'.

2.35. The Impact Risk Zones which are provided on the MAGIC website (www.magic.gov.uk) have been used as a starting point in determining Likely Significant Effect on Habitats sites and spatial data has been used to determine the proximity of potential development locations to the Habitats sites.

2.36. Two screening tables are provided in Appendix 1 listing all the designated sites screened against the policies and Submitted Sites, setting out all identified potential impact pathways. This has been used to assist in identifying potential Likely Significant Effects.

2.37. Each potential impact pathway is considered in more detail below.

Land Take

2.38. Direct or indirect impacts to a Habitats site could cause habitat loss, degradation or fragmentation.

2.39. Loss of land may have the potential to result in Likely Significant Effects to Habitats sites where the habitat affected contributes towards maintaining the interest feature for which the Habitats sites are designated.

2.40. Quarrying processes could cause significant effects, e.g. by soil removal/mineral extraction, infilling of voids and water bodies; alterations or other works to disused quarries. Examples include:

- Removal of habitat
- Smothering
- Habitat degradation

- Direct mortality
- Sedimentation / silting
- Prevention of natural processes
- Habitat degradation
- Erosion
- Trampling
- Fragmentation
- Severance / barrier effect

2.41. Land take is therefore within scope of the HRA screening.

Impacts on protected species outside the designated site

2.42. Functionally linked land is land situated outside the Habitats site which supports designated features of Habitats sites. Loss of land may have the potential to result in Likely Significant Effects to Habitats sites where the habitat affected contributes towards maintaining the interest feature for which the Habitats site is designated, for example through the loss of feeding grounds for an identified species.

2.43. Mobile interest features listed in the relevant Habitats sites- i.e. the birds- may use off-site habitat (land outside of the SPA and Ramsar site boundary) for feeding, roosting, foraging and loafing, especially large fields comprising arable and pastoral land uses and coastal habitats, for example, Hen Harrier, Brent Geese, Lapwing and Golden Plover. Natural England has previously advised that their recognised foraging distance threshold for the majority of wetland bird (excluding Lapwing and Golden Plover) species is 2km from a designated site. Lapwing and Golden Plover can be found considerably further from the coastal sites. Lapwing is listed on the Waterbird assemblage (non-breeding) for Stour and Orwell Estuaries SPA and Golden Plover is listed on Criterion 6 for Blackwater Estuary Ramsar site. However, both species are also considered as part of the assemblage of waterfowl importance for all the Essex coastal SPAs and Ramsar sites scoped into this HRA.

Habitat/species disturbance

2.44. Disturbance concerns species, rather than habitats e.g. wetland birds and it may be limited in time (noise, source of light etc.). The intensity, duration and frequency of repetition of disturbance are therefore important parameters. The following factors can be regarded as significant disturbance. Any event, activity or process contributing to the:

- The long-term decline of the population of the species on the site.
- The reduction, or to the risk of reduction, of the range of the species within the site.
- The reduction of the size of the available habitat of the species.

2.45. *Managing Natura 2000 Sites* states that: "*Disturbance of a species occurs on a site from events, activities or processes contributing, within the site, to a long-term decline in the population of the species, to a reduction or risk of reduction in its range, and to a reduction in its available habitat. This assessment is done according to the site's conservation objectives and its contribution to the coherence of the network*."

2.46. Minerals processing can also generate dust. Effects of dust on vegetation will depend on the prevailing wind direction and the distance the dust can travel is related to particle size. It is likely that the large and intermediate size particles would create more harm by smothering vegetation and preventing light to reach chloroplasts.

2.47. Increase of any type of disturbance from the quarrying processes and after uses, such as those arising from noise, light, dust and vibration and human presence and vehicular traffic are capable of causing significant disturbances for species, e.g. wintering waterfowl populations. Disturbance to qualifying species can also be caused by invasive species.

2.48. Restored quarries can be used for recreation (see Policy S:12) and this can create increased pressure on the qualifying features of the Habitats sites scoped in. Many Habitat sites in Essex (SPAs and Ramsar sites) have bird interest and / or associated habitats which have the potential to be adversely affected by increased recreational pressure.

2.49. Disturbance- including from recreational impacts- is therefore within scope of the HRA screening. A precautionary distance of 2km from a Preferred Site has been used for the purpose of this screening assessment.

Water Quality and Quantity

2.50. In general, an important determinant of the nature of wetland Habitats sites and the species that they support is the quality of the water that feeds them. Poor water quality can have a range of environmental impacts.

2.51. For many SPA features which are dependent on wetland habitats supported by surface water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year during key stages of their life cycle. Poor water quality and inadequate quantities of water can adversely affect the availability and suitability of feeding and roosting habitats[4].

2.52. Changes in surface or ground water availability and water quality to water-dependent Habitats sites e.g. changes in groundwater regimes due to gravel extraction, dewatering or discharges- can have an effect on the Habitats sites.

[4] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Lee Valley Special Protection Area (SPA) Site Code: UK9012111 Date of Publication: 5 February 2018 UK9012111_Lee Valley_SPA_Published 14 Sep 2023 (naturalengland.org.uk)

2.53. Quarries that are below the water table will require dewatering on a regular basis. Dewatering can lead to a reduction in the water table and “draw down” from hydraulically linked groundwater dependent habitats (including streams and rivers).

2.54. The physical presence of a new quarry above the water table can increase the possibility of aquifer contamination and result in a direct reduction in temporary groundwater storage capacity.

2.55. If the water that is pumped from a quarry as a result of dewatering has a high proportion of clays and suspended particles, or is contaminated with metals, it can reduce water quality within those watercourses that receive the water.

2.56. Backfilling quarry void space with overburden or imported fill may cause changes to groundwater levels, quality, and flow paths in adjoining areas.

2.57. High levels of toxic chemicals and metals can result in immediate death of aquatic life and have detrimental effects even at lower levels, including changes in wildlife behaviour and increased vulnerability to disease. Any discharge from construction processes could therefore result in a Likely Significant Effect, although precautionary measures e.g. a management plan for construction or discharge consents from Environment Agency, are likely to be considered as appropriate mitigation.

2.58. Some of the Habitats sites scoped in for assessment in this HRA support features which are dependent on water quantity and quality. Any changes in water quantity and quality therefore have the potential to significantly affect them. Consequently, effects could be caused if mineral sites cause changes to demand for water or changes in groundwater regimes, e.g. due to gravel extraction, or could pollute ground or surface water without sufficient protection in place.

2.59. Due to the very nature of watercourses, hydrological connectivity can continue for considerable distances. Natural England have advised on project level HRAs that it requires professional judgement when looking at hydrological impacts and greater than 20km is considered over precautionary. Sites are screened in where there is a potential pollution pathway connecting a Habitats site with water quality or quantity ‘sensitivities’ and a minerals Site.

2.60. Map 2: *Location of Submitted Sites and Main Rivers* shows the position of designated Main Rivers (under Environment Agency control) with the Habitats sites within scope and Minerals sites – and therefore creating a potential impact pathway connecting them- can be found in Chapter 3.

2.61. The quality and quantity of the water feeding into many of the Habitats sites in Essex is an important determinant of the condition of their habitats and the species they support. Water quality and quantity are therefore within scope of this HRA screening for the Habitats sites scoped in, as shown in Table 3.

Air Quality

2.62. Changes in localised atmospheric pollution levels e.g. dust emissions or increased HGV traffic may cause an effect where the Habitats sites could be reached by prevailing wind.

2.63. There are a number of atmospheric pollutants which can result in direct or indirect impacts to Habitats sites. These impacts are usually caused when the qualifying features are plants, soils and wetland habitats. For example, saltmarsh eutrophication could lead to successional vegetation change. However, some species may also be indirectly impacted from air pollution causing changes in habitat composition. A table setting out the main sources and effects of air pollutants on Habitat Sites is provided in Appendix 2.

2.64. The primary contributor to atmospheric pollution is transport related activities. Therefore, the main pollutants to atmospheric pollution are considered to be oxides of nitrogen (NOx), sulphur dioxide (SO2) and ammonia (NH3) from traffic emissions. However, high intensities of agricultural practices are also considered to have a significant impact to air pollution.

2.65. A distance of 200m has been used for considering Likely Significant Effects from potential air pollution. This is taken from the National Highways: Standards for Highways: Design Manual for Roads and Bridges)[5] which assumes that air pollution from roads is unlikely to be significant beyond 200m from the road itself. This HRA has taken into account any significant effects on receptors up to 200 metres from a Preferred Site as well as 200 metres from the major roads that would be anticipated to be used for transportation of the minerals.

2.66. Map 3 showing the location of major roads, Habitats sites within scope and Submitted Sites can be found below, in Chapter 3.

2.67. Consequently, it is considered appropriate that Atmospheric Pollution, particularly nitrogen deposition, should be considered and Air Quality has been scoped in for the HRA screening.

Habitats Regulations Assessment For the Essex Minerals Local Plan Adopted July 2014 (as amended 2021), Essex County Council, March 2021

2.68. A Habitats Regulations Assessment (HRA)- entitled *Habitats Regulations Assessment For the Essex Minerals Local Plan Adopted July 2014 (as amended 2021) Essex County Council March 2021)* – was prepared in 2021 by Place Services for the emerging Regulation 18 Essex Minerals Local Plan July 2014 (as amended in 2021). This updated the HRA prepared by URS -entitled *Essex*

5National Highways: Standards for Highways: Design Manual for Roads and Bridges, LA 105 REV 0 Air Quality https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

County Council Replacement Minerals Local Plan: Pre Submission Draft -Habitats Regulations Assessment, November 2012.

2.69. The HRA prepared in 2021 (hereafter referred to as the HRA 2021) undertook an Appropriate Assessment which was not able to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), could avoid any adverse effect on integrity on any Habitats Sites.

2.70. One issue remained in relation to air quality and Policy *S11: Access and Transportation*. The HRA 2021 was able to eliminate all other elements of the RMLP as being able to avoid Adverse Effects on the Integrity of one of more Habitats Site, alone or in combination with other plans or projects. The issue of air quality impacts needed further advice from Natural England to support an assessment of effects.

2.71. There were several potential Likely Significant Effects identified on Habitats sites resulting from the Essex Minerals Local Plan July 2014 (as amended in 2021) which could not all be ruled out during Screening at Stage 1 of the HRA 2021. The policies and Preferred Sites screened in for further assessment in 2021 are set out below:

- S5: Creating a network of aggregate recycling facilities
- S6: Provision for sand and gravel extraction
- S8: Safeguarding mineral resources and mineral reserves
- S9: Safeguarding mineral transhipment sites and secondary processing facilities
- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel Extraction
- P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh)
- DM1: Development Management Criteria
- DM3: Primary Processing Plant
- DM4: Secondary Processing Plant
- A31: Maldon Road, Birch
- B1: Slough Farm, Ardleigh

2.72. There were a number of potential impacts upon Habitats Sites which could have arisen as a result of the Minerals Local Plan review in 2021. At Screening stage the Habitats Sites predicted to have Likely Significant Effect arising from the RMLP (without considering mitigation) were:

- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar Colne Estuary SPA and Ramsar site

- Colne Estuary SPA and Ramsar site
- Epping Forest SAC
- Essex Estuaries SAC
- Hamford Water SPA, SAC and Ramsar site
- Stour and Orwell SPA and Ramsar site

2.73. The policies and Preferred Sites screened in were considered against the following potential impact pathways at Appropriate Assessment.

- Increase in disturbance
- Changes in water quality
- Changes in atmospheric pollution levels

2.74. The Appropriate Assessment recommended a number of amendments to the emerging Minerals Local Plan. The Recommendations included amendments to strengthen supporting text and/ or policies for the following sections, as summarised below:

- S5: Creating a network of aggregate recycling facilities
- S9: Safeguarding mineral transhipment sites and secondary processing
- facilities
- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- DM1: Development Management Criteria
- A31: Maldon Road, Birch

Policy S5: Creating a network of aggregate recycling facilities

2.75. The RMLP reviewed in 2021 advised that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. No locations were provided for new sites. While the Policy sets out parameters for when new sites might be acceptable, specific sites were not identified and so it was not possible to fully to assess whether there could be any adverse effects on integrity. Therefore, it was recommended that additional clarification should be included within the supporting text for Policy S5.

Policy S9: Safeguarding mineral transhipment sites and secondary processing facilities

2.76. Disturbance and water quality were considered with regard to transhipment sites, particularly the safeguarded land at Parkeston Quay at Harwich Port, which is adjacent to the Stour and Orwell Estuaries SPA and Ramsar site. If the Parkeston Quay transhipment site comes forward as a planning application, it would be

situated within the existing land-based area of Harwich International Port. As such, it would be surrounded by other port infrastructure and therefore it is feasible that any impacts arising from construction or use could be mitigated and that adverse effect on site integrity could be avoided with appropriate measures in place. These would need to be considered in a project-level HRA.

Policy S12: Mineral Site Restoration and After-Use

2.77. A key recommendation of the HRA undertaken in 2012 (by URS) was to ensure that the qualifying features of Abberton Reservoir SPA and Ramsar site, particularly breeding cormorants, would not be disturbed. Crows and gulls are attracted to sites using putrescible waste for infilling. The HRA 2021 (by Place Services) continued to support this recommendation and recommended that restoration proposals for sites situated within an Impact Risk Zone[6] for Habitats sites should avoid using putrescible waste, or be able to demonstrate that the use of such waste for infilling will not result in adverse effects on the integrity of any Habitats Sites alone or in combination, through a project-level HRA.

2.78. In addition, while all the Preferred Sites restored for recreational purposes are sufficiently distant from any Habitats sites to be likely to cause any effects, it should be ensured that any unallocated site coming forward through the RMLP should not cause an adverse effect on integrity. The HRA recommended that the policy text is slightly updated for this purpose.

Policy DM1: Development Management Criteria

2.79. The need to avoid all adverse effects on the integrity of Habitats sites was included within the supporting text of DM1. However, given that the RMLP in 2021 included non-spatial policies and that it was not known where future sites might be located, or in what form, the HRA in 2021 recommended that the protection of Habitats sites should be added to DM1 to ensure that any future proposals of any kind permitted through the RMLP would avoid adverse effects on the integrity of any Habitats sites, either alone or in combination with other plans and projects. This was to ensure that unallocated minerals sites and supporting infrastructure and processes- e.g. aggregate recycling, primary or secondary processing and other transhipment sites- were considered appropriately, if they came forward within an IRZ.

2.80. In addition, amendments to two parts of the supporting text were recommended. Firstly, in paragraph 5.15 (Transport), the supporting text encouraged the carrying of material by water and rail wherever possible for environmental reasons. However, it also should have recognised that most of the coast is internationally designated and movement of barges could cause disturbance, and a potential adverse effect on integrity. Secondly, it was recommended that a new final section

[6] Impact Risk Zones are geographical zones mapped around each statutory designated wildlife site which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. More details can be found here: https://data.gov.uk/dataset/5ae2af0c-1363-4d40-9d1a-e5a1381449f8/sssi-impact-risk-zones-england

should be added to paragraph 5.41 (Biodiversity and Geological Conservation) to ensure that it is compliant with the legislation and guidance.

Preferred Sites

2.81. Two Preferred Sites were screened in with respect to potential water quality issues. These were A31 Maldon Road, Birch and B1 Slough Farm, due to their hydrological connectivity to Colne Estuary SPA and Ramsar site, albeit a considerable distance away. Whilst it was sufficient for other policies to protect B1, it was recommended that additional specific advice be provided for A31 as the watercourse runs through the centre of it. Careful consideration, planning, design and phasing would be required in order to ensure that water quality could not be affected downstream, thereby avoiding adverse effects on the integrity of any Habitats site. This fits with Vision Theme (B) (in Table 1 of the RMLP) which states that, “Phasing has been introduced so as to avoid over-supplying in order to protect Essex’s environment and our finite mineral resources”.

Policy S11: Access and Transportation

2.82. The HRA 2021 raised air quality concerns with respect to Epping Forest SAC. The issue of air quality impacts needed further advice from Natural England to support an assessment of effects. It was therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), could avoid any adverse effect on integrity from the RMLP either alone or in combination with other plans and projects.

2.83. Notwithstanding the above concerns surrounding Policy S11 and air quality, the measures recommended in this HRA were considered sufficient to ensure that all the other elements of the RMLP screened in during HRA Stage 1 would avoid all other adverse effects on site integrity either alone or in combination with other plans or projects through Stage 2.

2.84. The HRA 2021 explained that recommendations to amend or add text to the above policies would not exclude the need for project-level HRA but enabled a conclusion of no adverse effects on integrity at the Plan level, because the identified risks to Habitats sites were removed at a strategic level. Project level HRA provides a means of checking for any further risks unforeseen at the Plan level, and for developing project-specific mitigation measures in greater detail within a project-level Appropriate Assessment.

Assessing for any Significant Effects on a Habitats Site from the Plan, Either Alone or in Combination, with Other Plans or Projects

Screening categorisation

2.85. The Screening assessment is set out below in Chapter 3 of this report, and Tables 6 and 7 consider each policy and Submitted Sites of the RMLP respectively, using the precautionary principle. The results of the screening exercise are recorded.

2.86. Each policy included in the RMLP and every Submitted Site has been categorised using the criteria in Figure 4 below. This system has been used to record the potential for policies and Submitted Sites to have a Likely Significant Effect.

Figure 4: Screening criteria

Category A: Significant effects not likely
Category A identifies those policies that would not result in a Likely Significant Effect and are considered to have no adverse effect. These policies can be 'screened out' and no further assessment is required. This is because, if there are no adverse effects at all, there can be no adverse effect to contribute to in combination effects of other plans or projects.
Category B: Significant effects uncertain
Category B identifies those policies which will have no significant adverse effect on the site. That is, there could be some effect but none which would undermine the conservation objectives, when the policy is considered on its own. Given that there may be some effect this now needs to be considered in combination with other plans or projects. If these effects can be excluded in combination, the policy can be screened out and no further assessment required. However, if the possibility of a significant adverse effect in combination cannot be ruled out there will be a Likely Significant Effect in combination, and Appropriate Assessment will be required.
Category C: Likely Significant Effect
Category C identifies those policies which cannot be ruled out as having a Likely Significant Effect upon a Habitats Site, alone, that is the effect could undermine the conservation objectives. In this case an Appropriate Assessment is triggered without needing to consider in combination effects at screening stage, although they may need to be considered at Appropriate Assessment.

3. Screening of Likely Significant Effects

Scoping of Habitats Sites

3.1. The key Habitats sites information – i.e. the qualifying features and conservation objectives of the Habitats sites- together with current pressures and potential threats have been referenced. Impact Risk Zones (IRZ) have been interrogated on MAGIC and these help to show which elements may have an effect.

3.2. The Habitats sites scoped in or out are set out in Table 4 below. Policy specific impacts on Habitats sites over 20km from the Plan's area have been scoped out for Likely Significant Effects due to the distance and the identified Impact Risk Zones on the MAGIC Map. This distance is considered to be over precautionary for a water pollution impact pathway. This is based on previous advice from Natural England.

3.3. Map 1 below shows all Submitted Sites, active minerals sites within Essex and all Habitats sites within 20km of the administrative boundary of Essex

Map 1: Submitted Sites, Habitats Sites and Active Minerals Sites within Essex

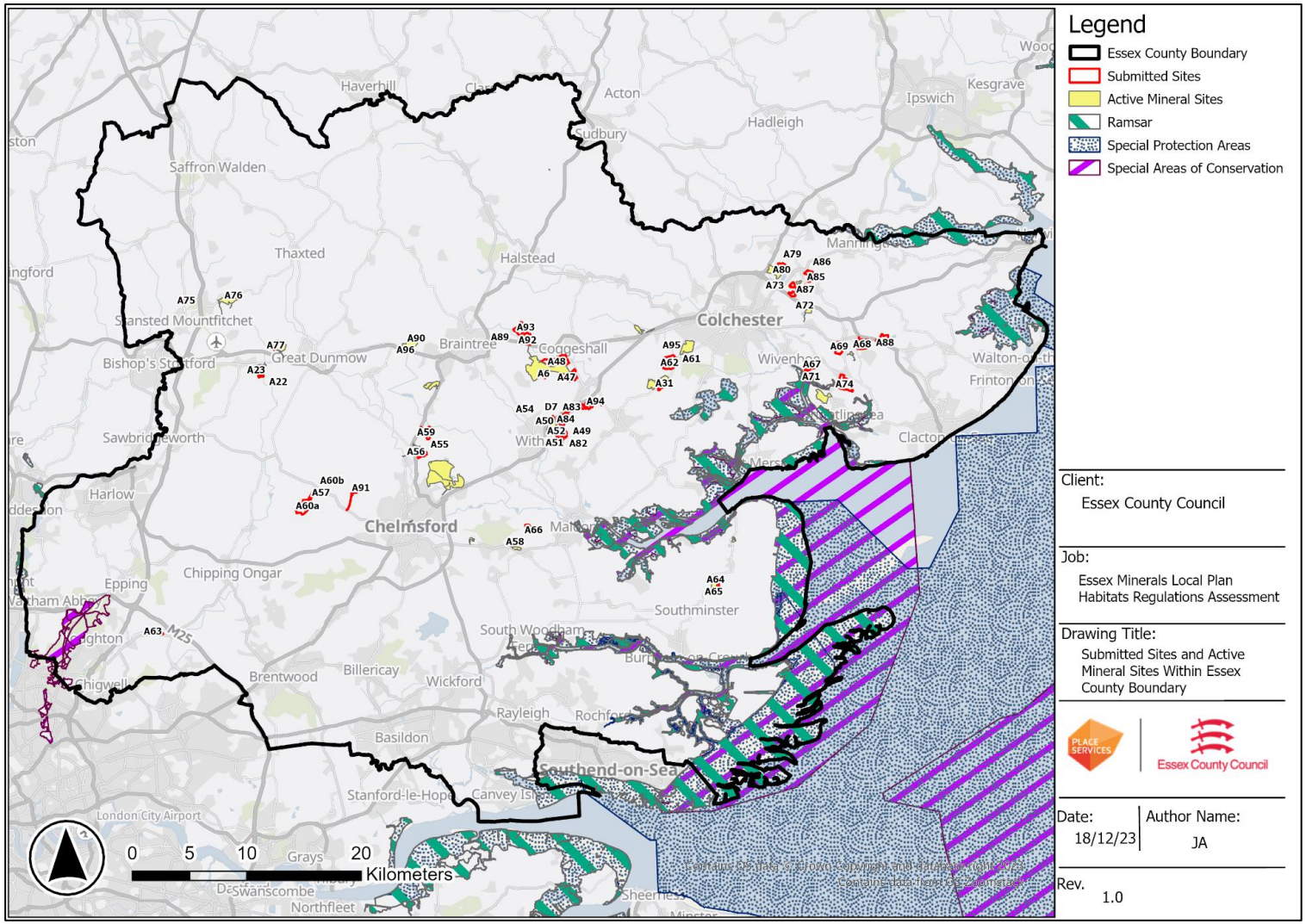


Table 4. List of Habitats Sites Within Scope Showing Distance from Plan Area

Site	Location	Distance from Plan area	Included within Assessment based on >20km distance and professional judgement?
North Downs SAC	Kent	43km	No
Staverton Park and the Thicks SAC	Suffolk	38km	No
Queendown Warren SAC	Kent	50km	No
Alde-Ore and Butley SPA, SAC and Ramsar	Suffolk	36km	No
Orfordness and Shingle Street SAC	Suffolk	33km	No
Devils Dyke SAC	Cambridgeshire, Suffolk	42km	No
Wormley-Hoddesdon Park Woods SAC	Hertfordshire	26km	No
Epping Forest SAC	Essex	Within Plan area	Yes
Hamford Water SPA, SAC and Ramsar site	Essex	Within Plan area	Yes
Essex Estuaries SAC	Essex	Within Plan area	Yes
Peter's Pit SAC	Kent	46km	No
Eversden and Wimpole Woods SAC	Cambridgeshire	39km	No
Margate and Long Sands SAC	Kent	39km	No

Site	Location	Distance from Plan area	Included within Assessment based on >20km distance and professional judgement?
Outer Thames Estuary SPA	Essex, Kent, Norfolk, Suffolk	28km	Yes
Foulness SPA and Ramsar site	Essex	Within Plan area	Yes
Medway Estuary and Marshes SPA	Kent	40km	No
The Swale SPA and Ramsar site	Kent	49km	No
Thames Estuary and Marshes SPA and Ramsar site	Thurrock and, Kent	29km	Yes
Dengie SPA and Ramsar	Essex	Within Plan area	Yes
Benfleet and Southend Marshes SPA and Ramsar site	Southend and Essex	Within Plan area	Yes
Stour and Orwell Estuaries SPA and Ramsar site	Essex, Suffolk	Within Plan area	Yes
Colne Estuary SPA and Ramsar site	Essex	Within Plan area	Yes
Blackwater Estuary SPA and Ramsar site	Essex	Within Plan area	Yes
Deben SPA and Ramsar site	Suffolk	30km	No
Crouch and Roach SPA and Ramsar site	Essex	Within Plan area	Yes

Site	Location	Distance from Plan area	Included within Assessment based on >20km distance and professional judgement?
Abberton Reservoir SPA and Ramsar site	Essex	Within Plan area	Yes
Lee Valley SPA and Ramsar site	Essex, Greater London, Hertfordshire	Within Plan area	Yes

3.4. The sites listed within Table 4 as not being within scope have been assessed as there being no impact pathway or too far away, based upon professional judgement.

3.5. The list of Habitats sites within scope, their qualifying features, conservation objectives and key vulnerabilities / factors affecting site integrity can be found in Appendix 3 which is provided separately due to the document's large size.

Identifying Potential Effects to Habitats Sites from the Minerals Local Plan Via Impact Pathways

3.6. This section of the HRA considers potential impact pathways which could connect any element of the RMLP to Habitats sites and thus lead to a Likely Significant Effect.

3.7. Table 5: *Habitats sites Scoped in for Further Assessment Showing Impact Pathways* below shows which pathways might be feasible. This is concluded through interrogation of the key vulnerabilities and issues affecting these Habitats sites, as identified in the relevant Site Improvement Plans.

3.8. Where a potential impact pathway on a Habitats site is identified, through which the Submitted Sites could create a Likely Significant Effect, these are considered further below. Potential impact pathways between the Submitted Sites and Habitats sites are ruled out due to distance (>20km), lack of hydrological connectivity or where the issues and key vulnerabilities, such as climate change, sea wall flood protection, and forestry, are unrelated to potential impacts from the RMLP.

Land Take

3.9. There are no Submitted Sites that have been identified as falling directly within or adjacent to a Habitats site. The closest site (A71) is c.130 metres from the Colne Estuary SPA and Ramsar.

3.10. Therefore, land take is not considered further within the scope of the HRA screening.

Impact of protected species outside the designated sites

3.11. Of the Habitats sites scoped in, the following have been identified as having the potential for the RMLP to cause impacts on qualifying species outside the designated sites (functionally linked land) with the potential to result in a Likely Significant Effect, these sites support mobile species (i.e.) birds including Brent Geese, Lapwing, Golden Plover and Hen Harrier that are known to use land away from Habitats sites, e.g. lowland farmland and grassland for feeding or roosting.

- Abberton Reservoir SPA and Ramsar
- Blackwater Estuary SPA and Ramsar site
- Benfleet and Southend Marshes SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Foulness SPA and Ramsar site
- Hamford Water SPA and Ramsar site
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

Disturbance

3.11. Of the Habitats sites within scope, the following have been identified as disturbance having the potential for Likely Significant Effects, for example due to as birds being listed as qualifying features, which are susceptible to disturbance:

- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar site
- Benfleet and Southend Marshes SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Essex Estuaries SAC
- Epping Forest SAC
- Foulness SPA and Ramsar site

- Hamford Water SPA, Ramsar site and SAC
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

Water Quality

3.12. Of the Habitats sites scoped in, the following have been identified as water quality creating the potential for Likely Significant Effects (e.g. water pollution) alone:

- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar site
- Benfleet and Southend Marshes SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Essex Estuaries SAC
- Epping Forest SAC
- Foulness SPA and Ramsar site
- Hamford Water SPA, SAC and Ramsar site
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

3.13. Therefore, water quality impacts are within the scope of the HRA screening.

3.14. Map 2 shows the location of main rivers, Habitats sites within scope and Submitted Sites - and which demonstrate potential impact pathways between the Habitats sites and Submitted Sites via the major watercourses.

Water Quantity

3.15. Of the Habitats sites scoped in, the following have been identified as water quality creating the potential for Likely Significant Effects (e.g. hydrological changes, inappropriate water levels) alone:

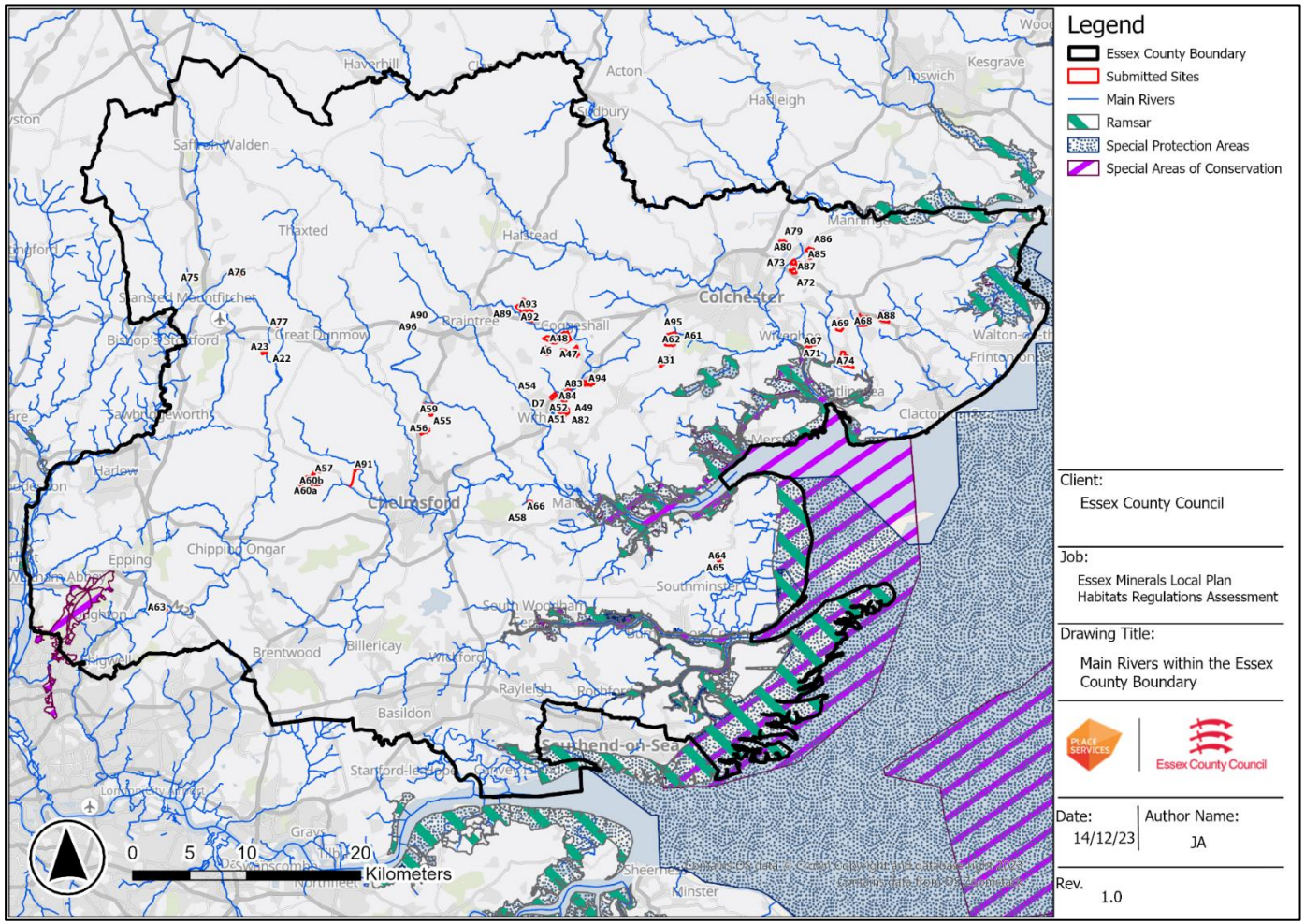
- Epping Forest SAC
- Lee Valley SPA and Ramsar site

3.16. Lee Valley SPA and Ramsar site could be affected by hydrological changes. The SIP which sets out a measures to “Investigate and agree appropriate water levels”. Furthermore, the European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Lee Valley Special Protection Area (SPA) Site Code: UK9012111 Date of Publication: 5 February 2018 (UK9012111_Lee Valley SPA Published 14 Sep 2023 (naturalengland.org.uk)) has a target for water quality/ quantity: “Where the supporting habitats of Great Bittern are dependent on surface water ensure water quality and quantity is maintained to a standard which provides the necessary conditions to support the feature”.

3.17. Epping Forest SAC could be affected by inappropriate water levels, as identified in the SIP. Wet heath is dependent on suitable ground water levels and there is a threat of prolonged drying out through climate change. “Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present.”7

[7] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Epping Forest Special Area of Conservation (SAC) Site Code: UK0012720 Date of Publication: 23 January 2019 UK0012720_Epping Forest_SAC_Published 14 Sep 2023 (naturalengland.org.uk)

Map 2: Location of Submitted Sites and Main Rivers



Air Quality

3.18. Of the Habitats sites within scope, the following have been identified as having the potential for Likely Significant Effects being caused by air quality.

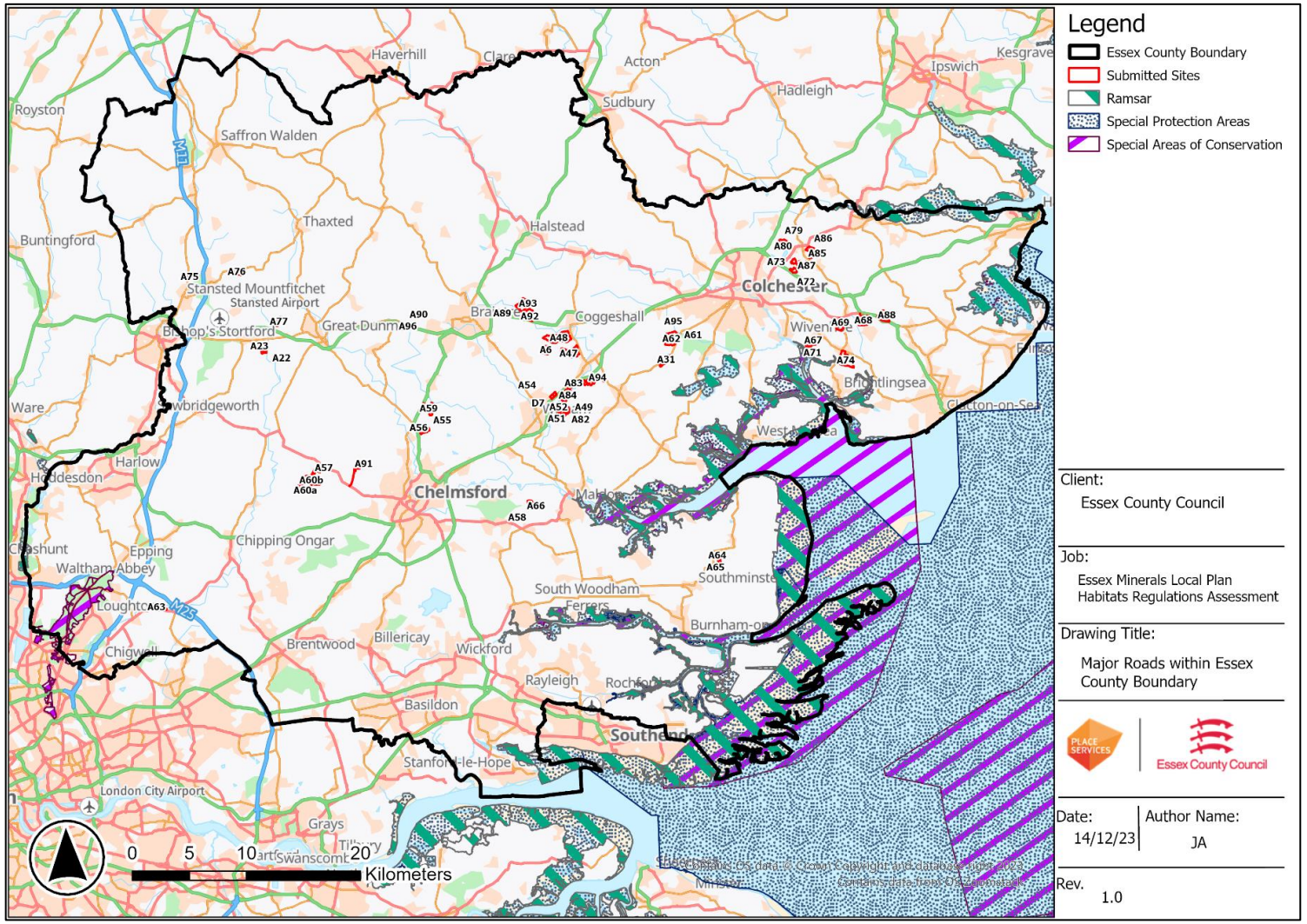
- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar site
- Benfleet and Southend SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Epping Forest SAC
- Essex Estuaries SAC
- Foulness SPA and Ramsar site
- Hamford Water SPA, SAC and Ramsar site
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

3.19. There are many uncertainties regarding transportation routes to and from the quarries. In particular, any vehicle travelling to and from London or South Essex may travel on the M25 and pass near to Epping Forest SAC. In addition, the A14 passes within 200 metres of the Stour and Orwell Estuaries SPA and Ramsar and any vehicles passing to Suffolk may use this road over the Orwell Bridge.

3.20. Therefore, air quality impacts must be considered within the scope of the HRA screening.

3.21. Map 3 showing the location of key roads, Habitats sites within scope and Submitted Sites and can be found below.

Map 3: Major Roads, Habitats Sites and Submitted Sites



3.22. Table 5 below considers each Habitats site within scope and sets out the possible effects from quarrying activities on the qualifying features.

Table 5. Habitats Sites Scoped in for Assessment Showing Impact Pathways

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
Abberton Reservoir SPA and Ramsar site	Air quality Water quality Disturbance Impact on protected species outside the protected site	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration, including use of putrescible waste.	Nitrogen deposition. Airborne. Plant machinery and lorry transportation to and from quarries. Pollutants and silt into surface water / water courses. Disturbance to qualifying species (breeding birds) e.g. by predation on qualifying nesting birds.	Breeding Cormorant, Gadwall, Mute Swan, Shoveler, Common Pochard, Tufted Duck. Waterbird assemblage. The structure and function of the habitats which support this SPA feature may be sensitive to changes in air quality. Siltation from silt entering the reservoir from Layer Brook. Public Access/Disturbance. Water Pollution. For many SPA features which are dependent on wetland habitats supported by surface water, maintaining the quality of water supply will be critical, especially at certain times of year during key stages of their life cycle. Poor water quality and inadequate quantities of water can adversely affect the availability and suitability of breeding, rearing, feeding and roosting habitats. The site is identified as at risk from air pollution as

8 This information is derived from site citations (https://designatedsites.naturalengland.org.uk/) and Site Improvement Plans, e.g.: http://publications.naturalengland.org.uk/publication/6270737467834368:

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
				Nitrogen deposition levels exceed the site-relevant critical load for ecosystem protection. However, the site's Nitrogen load is likely to be dominated by levels in the water entering the reservoir (mainly from the distant Ouse catchment) rather than direct deposition.
Benfleet and Southend Marshes SPA and Ramsar site	Air quality Water quality Disturbance Impact on protected species outside the protected sites	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation or any landfilling using putrescible waste	Nitrogen deposition. Airborne. Plant machinery and lorry transportation to and from quarries. Pollutants to surface water / water courses. Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	Dark-bellied Brent Goose, Ringed Plover, Grey Plover, Red Knot, Dunlin, Waterbird assemblage. Nitrogen deposition exceeds site-relevant critical loads. Public Access/Disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities.
Blackwater Estuary SPA and Ramsar site	Air quality Water quality Disturbance Impact on	Lorry transportation to and from quarries. General quarrying	Nitrogen deposition. Airborne. Plant machinery and lorry transportation	Dark-bellied Brent Goose, Common Pochard, Hen Harrier, Ringed Plover, Grey Plover, Dunlin, Black-tailed Godwit Breeding Little Tern. Waterbird assemblage. Saltmarsh

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
	protected species outside the protected sites	activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation or any landfilling using putrescible waste.	to and from quarries. Pollutants to surface water / water courses. Disturbance to and loss of Brent Goose feeding areas outside Habitats site. Disturbance to Golden Plover outside Habitats sites.	plants; invertebrates. Species/populations identified subsequent to designation for possible future consideration under criterion 6: Wintering European Golden Plover, Common Redshank, Common Shelduck. Public access / disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities. Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects.
Colne Estuary SPA and Ramsar site	Air quality Water quality Disturbance Impact on protected species outside of the protected site	Lorry transportation to and from quarries. Transhipment General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of	Nitrogen deposition. Airborne: Plant machinery and lorry transportation to and from quarries. Predation on Little tern. Pollutants/silt to surface water / watercourses. Importing non-native invasive	Dark-bellied Brent Goose, Breeding Little Tern, Ringed Plover, Common Pochard, Hen Harrier and Common Redshank. Waterbird assemblage. Saltmarsh; nationally scarce wetland plants; British Red Data Book invertebrates. Public access /disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities.

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		restoration e.g. recreation or any landfilling using putrescible waste. e.g. recreation.	species on ships. Disturbance: Noise, dust and lights, recreation as after use. Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	Breeding population of Little Tern, a species particularly susceptible to predation by gulls attracted to putrescible waste. Development (Planning permission- general): several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development. Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects.
Crouch and Roach Estuaries SPA and Ramsar site	Air Quality Water quality Disturbance Impact on protected species outside of the protected site	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities,	Nitrogen deposition. Airborne: Plant machinery and lorry transportation to and from quarries. Disturbance: Noise, dust and lights, recreation as after use.	Dark-bellied Brent Goose and Waterbird assemblage. Rare, vulnerable or endangered species or subspecies of plant and animal. Important invertebrate species. Public access /disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		transportation and some types of restoration e.g. recreation any landfilling using putrescible waste.	Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	based activities. Development (Planning permission- general): several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development. Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.
Dengie SPA and Ramsar site	Air quality Water quality Disturbance Impact on protected species	Lorry transportation to and from quarries. General quarrying activities e.g.,	Nitrogen deposition. Airborne: Plant machinery and lorry transportation to and from	Dark-bellied Brent Goose, Grey Plover, Hen Harrier, Knot, Eurasian Oystercatcher, Bar-tailed Godwit and Waterbird assemblage. Atmospheric nitrogen

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
	outside of the protected site	extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation. Any landfilling using putrescible waste.	quarries. Disturbance: Noise, dust and lights, recreation as after use. Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition. Public access /disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities. Development (Planning permission- general): several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development.
Epping Forest SAC	Air quality Water quality	Lorry transportation to and from	Nitrogen deposition and water quality	H4010- Wet heathland with cross-leaved heath, European dry heaths,

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
	Water quantity	quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration.	resulting from increased traffic. Close to M25. Inappropriate water levels and pollution affects the wet heath. Water Pollution: Surface run-off of poor-quality water from roads with elevated levels of pollutants, nutrients and salinity may be affecting wet heath, probably mostly around the edges.	Beech forests on acid soils. Stag Beetle. Nitrogen deposition exceeds site-relevant critical loads for ecosystem protection. Some parts of the site are assessed as in unfavourable condition for reasons linked to air pollution impacts.
Essex Estuaries SAC	Air quality Water quality Disturbance	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of	Pollutants to surface water / water courses. Changes in vegetation composition of breeding areas. Plant machinery and lorry transportation to and from quarries. Disturbance:	Glasswort and other annuals colonising mud and sand, Cord-grass swards, Atlantic salt meadows, Mediterranean saltmarsh scrub. Estuaries, Mudflats and Sandflats. Increased nutrient levels affecting habitats onsite. Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. Natural England notes that further

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		restoration.	Noise, dust and lights, recreation as after use Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	investigation of potential atmospheric nitrogen impacts on the site is required. Development (Planning permission- general): several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development.
Foulness SPA and Ramsar site	Air quality Water quality Disturbance impact on protected species outside of the protected site	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation e.g. recreation or any landfilling	Nitrogen deposition Airborne: Plant machinery and lorry transportation to and from quarries. Disturbance: Noise, dust and lights, recreation as after use. Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	Hen Harrier, Dark bellied Brent Goose, Eurasian Oystercatcher, Grey Plover, Bar-tailed Godwit, Pied Avocet, Ringed Plover, Common Redshank, Sandwich Tern, Common Tern, Little Tern, Red Knot and Waterbird assemblage. Saltmarsh habitat and invertebrates Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		using putrescible waste.		man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition. Development (Planning permission- general): several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development. Public access /disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities.
Hamford Water SPA, SAC and Ramsar site	Air quality Water quality Disturbance Impact on protected species outside of the protected site	Plant machinery and lorry transportation to and from quarries	Nitrogen deposition. Hog's fennel grows along the banks of borrow-dykes and ditches and is therefore likely to be sensitive to changes in water quality. As Fisher's	Breeding Little Tern. Non-breeding Dark-bellied Brent Goose, Common Shelduck, Eurasian Teal, Pied Avocet, Ringed Plover, Grey Plover, Black-tailed Godwit, Common Redshank. Fisher's Estuarine Moth (SAC). The supporting habitat of Fisher's Estuarine Moth is considered sensitive

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
			estuarine moth spends some of life cycle stages below ground it may be affected by ground water levels. Airborne: Plant machinery and lorry transportation to and from quarries. Disturbance: Noise, dust and lights, recreation as after use. Disturbance to and loss of Brent Goose feeding areas outside Habitats site.	to changes in air quality, water levels and scrub encroachment. Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. Natural England report that this requires further investigation.
Lee Valley SPA and Ramsar site	Air quality Water quality Water quantity Disturbance	Lorry transportation to and from quarries. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some	Nitrogen deposition. Airborne: Plant machinery and lorry transportation to and from quarries. Disturbance: Noise, dust and lights, recreation as after use.	Wintering Bittern (Annex 1), Northern Shoveler and Gadwall. Water pollution. Air Pollution: risk of atmospheric nitrogen deposition.

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		types of restoration e.g. recreation or any landfilling using putrescible waste. e.g. recreation.		
Stour and Orwell Estuaries SPA and Ramsar site	Air quality Water quality Disturbance Impact on protected species outside the protected sites	Plant machinery and lorry transportation to and from quarries. Use of estuary to transport to/ from current and future Transhipment sites. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation or, any landfilling using putrescible	Nitrogen deposition. Pollutants to surface water / water courses. Importing Non-native invasive species on ships. Erosion through port development and maintenance dredging for transhipment site. Airborne: Plant machinery and lorry transportation to and from quarries. Disturbance: Noise, dust and lights, recreation as after use. Disturbance to and loss of	Breeding: Avocet. Migratory species: Black-tailed Godwit, Dunlin, Grey Plover, Pintail, Redshank, Ringed Plover, Shelduck, Turnstone Water bird assemblage (non-breeding) including. Lapwing, Nationally scarce plants. Various recreational activities likely to impact Habitats supporting breeding and overwintering water birds. Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. Natural England report that this requires further investigation. Development (Planning permission- general). The issue of development in combination with other

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		waste.	Brent Goose feeding areas outside Habitats site. Disturbance to lawing outside Habitats sites.	factors is not fully understood. Difficult issues highlighted by the SIP include development outside the SPA boundary which can have negative impacts, particularly on the estuaries' birds; assessing the indirect, 'knock-on' effects of proposals. Erosion: Natural coastal processes exacerbated by fixed sea defences, port development and maintenance dredging. Erosion is being tackled through sediment replacement for additional erosion that can be attributed to port development and maintenance dredging. A realignment site has been created on-site to make up for the loss of habitat due to capital dredging.
Thames Estuary and Marshes SPA and Ramsar site	Air quality Disturbance	Lorry transportation to and from quarries. Transhipment General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation	Nitrogen deposition.	Hen Harrier, Pied Avocet, Ringed Plover, Grey Plover, Red Knot, Dunlin, Black-tailed Godwit, Common Redshank and Waterbird assemblage, wetland habitats and invertebrates. Nitrogen deposition exceeds site-relevant critical loads. Public Access/Disturbance: Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-

Habitats site	Impact Pathway	Development Operation/ activity	Potential Effect	Qualifying Features Potentially Affected and Reason[8]
		and some types of restoration.		based activities.

Assessment of Significant Effects on Habitats Sites from the Plan, Either Alone or in Combination, with Other Plans or Projects

Screening of Policies and Submitted Sites for Likely Significant Effect

3.23. This section screens the draft Replacement Essex Minerals Local Plan 2025 to 2040 (RMLP) and the Submitted Sites that are currently undergoing assessment. It identifies whether any part of the RMLP or the Submitted Sites have the potential to lead to any Likely Significant Effects on any Habitats site, based upon the detail set out Chapters 2 and 3 above. Each policy is considered against the Screening criteria set out in Figure 4 and provided with a corresponding category A, B or C.

3.24. The potential impact pathways identified above have been used in the Screening assessment, i.e. impact of protected species outside the designated sites, disturbance, water quality and air quality.

3.25. Table 6: *Screening of Policies* and Table 7*: Screening of Submitted Sites* set out the assessments and justifications for how elements of the RMLP have been screened in or out. They have referred to the last Essex RMLP review in 2021, and the accompanying HRA 2021 (Place Services) and compared these with the changes proposed to the current draft RMLP for 2024. They summarise the main ways in which the RMLP could cause Likely Significant Effects. Some of the potential Likely Significant Effects could be mitigated through the implementation of other proposals in the RMLP itself- i.e. embedded mitigation, which can be taken into account at the Screening state. On the whole, the recommendations made by the HRA 2021 have been incorporated into the draft Essex RMLP 2025 to 2040. A summary Screening assessment of the Habitats sites -with relevant impact pathways- is set out in Appendix 1.

3.26. Four policies, and 31 Submitted Sites have been screened in during this process, which have the potential to affect 25 Habitats sites in Essex. Where this is likely to result in a significant effect, or where there is uncertainty, in line with the precautionary approach being applied to the HRA, they are treated as giving rise to Likely Significant Effects until significant effects can be ruled out. The need for an 'Appropriate Assessment' is triggered where the HRA Screening assessment

identifies policies or Submitted Sites (either through the RMLP alone or in combination with other plans or projects) which may give rise to a Likely Significant Effect on any Habitats site.

Screening of Policies

3.27. Policy DM1 has been screened out as a result of incorporation of the recommendations made during the course of the production of the HRA report in 2021 (including Appropriate Assessment). The RMLP therefore now provides a general policy which requires that there will be no adverse effect on the integrity of Habitats sites. This provides embedded mitigation for the RMLP, which should be read as a whole.

3.28. Professional judgement has been made in this HRA 2024 report that this text is not needed to be repeated in every policy, providing that there is sufficient referencing and cross-referencing for each policy where deemed sufficiently important because each policy needs to be considered for every planning application submitted, and duplication should be avoided. This is based upon inspectors' rulings for other local plans[9]. As a result, several policies have been screened out that had previously been screened in. These include S5, S6, S8, S9, DM3 and DM4.

3.29. However, despite the embedded mitigation in DM1, there are still a number of other policies which need more consideration due to uncertainties and so may need to be brought to Appropriate Assessment for Regulation 19 of the RMLP. The policies screened in are listed here, and further details are provided below:

- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel Extraction
- P2 – Preferred Sites for Silica Sand Extraction

Policy S11: Access and Transportation and the Approach to Assessing Air Quality in the HRA

3.30. Policy S11 (Access and Transportation) is screened in due to concerns relating to air quality impacts from traffic on Habitats sites. The AA in 2021 explored issues surrounding air quality but it was not possible to reach a conclusion on whether the RMLP reviewed in 2021 could avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.

3.31. This Policy involving transportation to and from minerals sites needs further consideration with respect to air quality, which is recognised as a significant area of concern in terms of its impacts upon sensitive wildlife sites particularly in relation to the effect of NOx caused by vehicle emissions.

[9] Castle Point Local Plan (withdrawn in 2022) and Babergh & Mid Suffolk Joint Local Plan

3.32. Natural England provided the following interim advice in 2021:

"*You may find it helpful to review the linked guidance note here Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations - NEA001 if not already done so. This would be our starting point for the assessment.*

If the HRA work undertaken so far has identified air quality as a Likely Significant Effect, the usual assessment steps in the guidance should be followed. Please be aware that currently the M25 section closest to Epping Forest SAC is under particular scrutiny at present due to the uplift anticipated linked to the Lower Thames Crossing NSIP, and so the in-combination assessment will be important. Presumably traffic modelling work will help to identify the 'affected road network' and this will be helpful for assessment purposes." The HRA and Lower Thames Crossing NSIP examination has now been completed and will be considered in combination at Appropriate Assessment.

3.33. There are many uncertainties regarding transportation routes to and from the quarries. In particular, any vehicle travelling to and from London or South Essex may travel on the M25 and pass near to Epping Forest SAC. In addition, the A14 passes within 200 metres of the Stour and Orwell Estuaries SPA and Ramsar where any vehicles travelling to Suffolk may use this road over the River Orwell.

3.34. The removal of the low-level restoration restriction in Policy S12 also increases the potential increase of lorry movements to import waste to restore sites.

3.35. The 2021 HRA advised that detailed engagement with Natural England should be sought. The Predicted Environmental Concentration (PEC) of emissions resulting from the contribution of the RMLP access and transportation S11 policy was unknown. The HRA 2021 identified that the issue of air quality impacts needed further advice from Natural England to support assessment of effects on Habitats sites within scope of the Appropriate Assessment.

3.36. As part of the RMLP review in 2021, the HRA 2021 requested that Policy DM1 included reference to the fact that a transport assessment may potentially need to include an assessment of air quality to avoid adverse effects on the integrity of Habitats sites.

3.37. Paragraph 3.189 of the RMLP 2024 requires "*that effects on air quality shall be in accordance with published highway design guidance and national air quality objectives and strategies*."

3.38. Paragraph 3.195 states that minerals developments are "*expected to show that alternatives to road-based movements have been considered as part of a Transport Assessment or Transport Statement, particularly with regard to the use of existing transhipment facilities when appropriate*."

3.39. This Report also recognises that Policy S11 now promotes sustainable transport including electric vehicles and use of those roads in the upper tiers, defined as trunk roads (including motorways), strategic routes and main distributors.

3.40. Policy S11 of the RMLP 2024 (Paragraph 4, bullet number 2) now embeds the following mitigation into the Plan:

- "If appropriate, information to demonstrate that the proposed development will avoid adverse air quality impacts on Habitats sites,"

3.41. However, air pollution caused by traffic is now recognised as such a significant issue in general and Natural England require a greater level of scrutiny and certainty beyond scientific doubt. Potential Air Quality issues are highlighted as a risk in the SIPs for a number of Habitats sites, particularly Epping Forest SAC which is in close proximity to London and the M25.

3.42. It is recognised that transport routes to and from any future sites is not known. However, the Essex RMLP supports the London market and vehicles would therefore likely to be encouraged to use the M25 (in accordance with the hierarchy), which passes next to Epping Forest SAC. Furthermore, it is noted that one of the Submitted Sites (A63: Patch Park, Abridge) is located 3.5km east of Epping Forest SAC.

~~3.43.~~ While lorry movements to minerals sites may or may not increase, further research is needed to ensure that there is no Likely Significant Effect, alone or in combination with other plans and projects.

3.44. Therefore, given the inability of the previous HRA 2021 to reach a conclusion on whether the RMLP 2021 could avoid any adverse effect on integrity, and need for additional research and liaison with Natural England, as well as current wider concerns surrounding air quality; specific concerns relating to the effects of air quality upon Epping Forest SAC and uncertainties due to the current lack of Preferred Sites, it would not be appropriate to screen out this Policy at this stage and we recommend that it is taken forward for further consideration at Appropriate Assessment, together with the air quality impact pathway.

Policy S12: Mineral Site Restoration and After-Use

3.45. The recommended text made by the HRA 2021 for S12 is now included in supporting text (3.207). Policy S12 Part 5. (i) states proposals shall… ensure that:

i) Adverse effects on the integrity of local wildlife habitats, and wider ecological networks, including the hierarchy of international, national and locally designates sites are avoided, either alone or in combination with other plans and projects,"

3.46. A particular focus of the 2012 and 2021 versions of the Essex RMLP HRAs has been in relation to infilling, particularly with putrescible waste.

3.47. Policy S12 now also encourages public access and recreation as after use. There is a greater emphasis on green and blue infrastructure, health and well-being and sustainable transport in the proposed amendments to the RMLP. Recreation as an after use has been screened in with respect to Submitted Sites as some are in close proximity to Habitats sites. Furthermore, recreation as an after-use cannot be screened out for any non-allocated sites which come forward during the life of the

RMLP as their locations are as yet unknown. Some recreational uses may struggle to be policy compliant with DM1 such as drones and kite flying.

3.48. Therefore, as a number of the newly Submitted Sites are relatively close to Habitats sites and, as recreation is being supported as a restoration option, this could cause disturbance should they be allocated as the RMLP progresses beyond Regulation 18 and Preferred Sites are selected.

3.49. As a result, Policy S12 continues to be screened in for further consideration at Appropriate Assessment, particularly to explore whether additional supporting text required relating to recreation is required.

Policies P1 and P2 - Allocated Sites for Sand and Gravel and Silica Sand Extraction

3.50. To provide for the County's mineral requirements, the Council will allocate sites for sand and gravel and silica sand extraction through Policies P1 (sand and gravel) and P2 (silica sand) of the RMLP. The Council has not yet decided which sites should be allocated for future minerals extraction; therefore, Policies P1 and P2 are not presented within this Regulation 18 version of the RMLP.

3.51. Policies P1 and P2 will therefore continue to be screened in as it is not currently possible to screen out due to the uncertainty of the sites that will be included as Preferred Sites later, at Regulation 19 stage. However, it is not intended to consider these policies any further in this HRA due to the lack of information. The Submitted Sites are considered below and in Table 7.

3.52. Table 6 lists all the component parts of the RMLP and provides a summary of the relevant changes to the RMLP since the previous HRA report. It also sets out the screening summary of each section, including policies.

Table 6. Screening of Policies

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
Introduction	A	Screen out	General aspirations, background information and scene setting. No LSE.	Minor amendments and reordering in 2021. RMLP 2024 refers to the new approach to reviewing the Plan and the new Plan period up to 2040. The approach has been changed in order to extend the Plan period. No LSE. No change to 2021 HRA screening assessment.	Scoped out
2.0 Spatial Portrait and Key Minerals Planning Issues	A	Screen out	General aspirations, setting out issues and background information. Major Infrastructure Schemes are listed in Paragraph 2.19. These are considered in the in-combination section of the Appropriate Assessment.	RMLP Review 2021: Updated to bring up-to-date and ensure it is factually correct. Major Infrastructure Schemes are listed. RMLP 2024: Major Infrastructure Schemes are no longer listed. 'Key Centres' replaced with 'current	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				major growth location'. Updates to paragraphs 2.8, 2.9, 2.16, 2.17, and 2.18 to present up to date strategic growth plans and/or emerging proposals. New climate issues section added 2021 and current strategic approach to addressing the impacts of climate change (2024). Screen out. No LSE. No change to 2021 HRA screening assessment.	
3.0 The Strategy Spatial Vision; Aims and Strategic Objectives; Spatial Priorities for Minerals	A	Screen out	General high-level aspirations that would not cause a LSE without the details provided under more specific policies.	RMLP Review 2021: Amended to better reflect desirable outcomes and accommodate proposed changes to policies suggested elsewhere. Reference to enhancing natural capital and mitigating against climatic impacts. Reference to specific 'growth centres' removed and subsequent revisions in approach to delivering	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
Development Policies S1 to S12 and supporting text considered individually below.				strategic growth at potential new cross-boundary Garden Communities. Updates to Spatial Vision to reflect NPPF and PPG. RMLP 2024: no additional amendments. 2021: Minor updates and amendments. Accommodation of changes in approach in relation to amendments made in other sections of the Plan. 2024: Aim 6 new strategic objective reference a) amended to reflect the proposed new plan period. 2024: removed reference to Preferred Sites. No LSE. No change to 2021 HRA screening assessment.	
S1 - Presumption	A	Screen out	High-level underpinning policy aiming to ensure sustainable	2021: Amended to reflect the	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
in Favour of Sustainable Development			development at all times. No LSE.	updated NPPF. No other amendments in 2021 or 2024.	
S2 -Strategic Priorities for Minerals Development	A	Screen out	General high-level aspirations that would not cause a LSE without the details provided under more specific policies. This is a high-level strategic policy about meeting the mineral supply needs of Essex whilst achieving sustainable development. Part 9 of the Policy sets out the principle of: "*Maintaining and safeguarding transhipment sites within the County to provide appropriate facilities for the importation and exportation of minerals*." One of the transhipment sites is a marine wharf facility at Parkeston Quay East, Harwich Port	2021: Minor modifications made to accommodate amendments proposed to other policies within the Plan. No additional changes in 2024.	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			Authority. This site is located near to the Stour Estuary SPA and Ramsar site. To date, a proposal has not materialised. However, in this Plan it is proposed to continue to safeguard this area for this purpose during the plan-period to ensure that this potential remains available as it is understood that this is currently being actively explored. Transhipment sites are discussed in more detail under Policy S9.		
S3 - Climate Change	A	Screen out	General plan-wide high-level aspiration for ensuring adaptation and resilience to climate change. No change to 2012 HRA.	2021: A number of amendments including landform and landscaping; need for adaptation and resilience to future climatic changes for lifetime of development (including restoration and aftercare); need for monitoring of energy demand and carbon emissions. Criteria 7 amended to identify the potential for water storage at	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				restored sites for water supply. Policy seeks to reduce/minimise emissions from transport and machinery. 2024: Review of policies and principles elsewhere to recognise that the approach to managing development in relation to the impacts of climate change is constantly evolving an ensure that they are up to date and in line with local and national climate targets. All minerals development to include a Climate Change Statement. No LSE. No change to assessment of 2021 HRA.	
S4 - Reducing the Use of Mineral Resources	A	Screen out	General plan-wide high-level aspiration. No change to 2012 HRA.	2021: Amendments to update and provide clarity and effectiveness. 2024: Para 3.40 is likely to require updating in reference to relevant ECC statements.	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				No LSE. No change to assessment of 2021 HRA.	
S5 - Creating a Network of Aggregate Recycling Facilities and New Transhipment Sites	C	Screen in	Policy S5 safeguards all existing aggregate recycling facilities in the county and sets out parameters for new facilities. The 2012 HRA considered that "Aggregate recycling can lead to disturbance effects on Special Protection Areas or Ramsar sites if they are in very close proximity to those sites and depending on local topography and the type of recycling involved (e.g. Concrete crushing)." However, this policy was screened out in 2012 as it was not actively promoting or seeking any new aggregate recycling sites. The Policy allows for permission of new sites at current minerals workings and other sites with no defined locations. Any new sites	2021: Clarity re mineral infrastructure safeguarding now being the preserve of Policy S9. Information added around the need for new applications to demonstrate that they would not have adverse effects on the integrity of internationally or nationally important wildlife sites, as a result of the HRA assessment. 2024: Policy title updated to include reference to new secondary processing and new transhipment sites. Text re mineral transhipment sites has been moved from Policy S9 to this Policy. Ref 3.75: Removal of 2021 HRA recommendation (section 6.5): "*Any new aggregate recycling sites*	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			may require project-level HRA if within an IRZ. Therefore, it is not possible to screen out/ conclude that there will be no LSE without more information about the location of the facilities, or by ensuring that adequate mitigation is in place.	*should avoid causing adverse effects on the integrity of internationally or nationally important wildlife sites, either alone or in combination with other plans and projects. This must be demonstrated through a project level Habitats Regulations Assessment, which will be required for any new aggregate recycling sites which fall within a Impact Risk Zone (IRZ).",* and instead includes this within Policy DM1. Policy S5, Criteria 3: amended wording Aggregate Recycling Facilities: *"…when the proposal is environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan".* Recommendation in 6.7 of HRA 2021 (for Policy S9) not included, i.e. "Any proposals to create a transhipment site at Parkeston Quay at Harwich Port will require a	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				project-level Habitats Regulation Assessment". Parkeston Quay is no longer indicated as a potential Mineral transhipment site and nor is this site safeguarded in adopted Section 2 of Tendring Local Plan. Separate Policy section for New Transhipment Sites: ".. *demonstrates, in line with the other Policies in this Plan, that proposals do not pose unacceptable harm to the environment and local amenity".* With embedded mitigation through DM1, Policy S5 can be screened out. No LSE. This is a change from assessment of 2021 HRA.	
S6 – General Principles for Sand and	C	Screen in	This policy was screened out in the 2012 HRA. However, it enables sites to come forward as	2021 and 2022 Call for Sites: Reserve sites re-categorised to	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
Gravel Provision			non-Preferred Sites if criteria are met. Therefore, it is not possible to conclude LSE without more information about the location of the facilities, or by ensuring that adequate mitigation is in place. Any new sites/projects may require project-level HRA if within an IRZ. Specific issues relating to Preferred Sites are discussed under Policies P1 and P2, which are screened in.	Preferred Sites. It was considered appropriate by the RMLP to continue to place no quantitative reliance on marine-sourced aggregate. 2024: updates to reflect the longer time period of the RMLP to 2040. RMLP identifies the need for an additional 64.56mt of sand and gravel through new site allocations in order to satisfy the forecasted provision (sales) rate of 3.98mtpa. Part c) of S6 requires the applicant to demonstrate that: *"c) The proposal is environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan*." There is no additional certainty regarding the geographical location of any sites outside of allocated area; thenature of these non-	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				preferred sites means that this situation will not change at plan level. However, the draft RMLP now contains a number of references to the protection of Habitats sites and the need for project level HRAs, particularly through DM1. With this embedded mitigation through DM1, Policy S6 can be screened out. No LSE. This is a change from assessment of 2021 HRA.	
S7: Provision for industrial minerals	A	Screen out	General statement of policy. Policy S7 sets out the commitment and requirement to plan for additional silica sand provision at Martells Quarry. This provision will be met by this Preferred Site to be worked as an extension to the existing quarry. This issue is addressed in Policy P2 which is screened in.	2021: "*The proposal is environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan"* 2024: Reference to existing sites (including Martells Quarry) removed	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				from S7 requires the applicant to demonstrate that: "*The proposal would be environmentally acceptable, and* *The proposal is environmentally suitable and sustainable."* S7 does not cross refer to other policies in the RMLP; it is recommended that it states that it should be *consistent with the relevant policies set out in the Development Plan*." No LSE. No change to assessment of 2021 HRA.	
S8: Safeguarding mineral resources and mineral reserves	C	Screen in	Policy S8 was screened out in the 2012 HRA. However, it aims to safeguard Mineral Safeguarding Areas (MSAs) from sterilisation by other developments and encourages prior extraction where practical, thereby creating	This Policy has been revised in 2024. The aspiration to safeguard land would not by itself lead to LSE and Habitats sites would (need to) be considered through other policies.	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			the potential for LSE. Policy S8 is screened in as without knowledge or certainty of specific locations it is not possible to conclude that there would be no LSE. Any new sites/projects may require project-level HRA if within an IRZ.	With the embedded mitigation through DM1, Policy S8 can be screened out. No LSE. This is a change from assessment of 2021 HRA.	
S9: Safeguarding mineral extraction sites and other Mineral Infrastructure	C	Screen in	Policy S9 aims to safeguard transhipment sites and secondary processing facilities. It was screened out in the 2012 HRA. No new mineral transhipment sites are proposed by RMLP. However, (RMLP Paragraph 3.147) states "the previously adopted Essex Minerals Local Plan (1996) identified the potential for a marine wharf facility at Parkeston Quay East, Harwich Port Authority. This site is near to the Stour Estuary SPA and Ramsar site. To date, a proposal has not materialised. However, in this Plan it is	2021: Redraft of S9 to introduce 'minerals infrastructure' and Mineral Infrastructure Consultation Areas. Safeguarding provisions to all existing and permitted mineral infrastructure and allocations, with removal of strategic and non-strategic distinction. Detail removed that dates the Plan in relation to sites and facility types. 2024: Some sections moved from S9 to S5. Text on mineral transhipment sites, secondary processing	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			proposed to continue to safeguard this area for this purpose during the plan-period to ensure that this potential remains available as it is understood that this is currently being actively explored". Therefore, this element is screened in as we cannot conclude that there would be no LSE. There are existing mineral transhipment sites at Chelmsford, Harlow, Marks Tey and Ballast Quay, Fingringhoe. No new transhipment sites which would be suitable in the future for establishing rail depots or marine wharves have come forward. Ballast Quay marine wharf (transhipment site at Fingringhoe) is c.0.25km upstream of Colne Estuary SPA and Ramsar site. The RMLP advises (in 3.156): that it would be inappropriate to continue safeguarding the Quay once extraction at Fingringhoe	facilities, coated stone plants, concrete and mortar products, and bagging plants, moved from S9 to S5 and DM3. Policy title altered to reflect the changes. Parkeston Quay East, Harwich Port Authority is situated adjacent to the Stour Estuary and is near to the Stour Estuary SPA and Ramsar site but no longer referred to in the text of RMLP. Recommendation in 6.7 of HRA 2021 is not included in S5 or S9 (requirement of project-level HRA). No maps of safeguarded facilities included, but a reference to the Authority Monitoring Report in the policy allows sites to be added and removed as planning permissions are granted and expire through this mechanism. With the embedded mitigation within DM1, Policy S9 can be screened out.	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			Quarry has ceased beyond the lifetime of operations at Fingringhoe Quarry. This marine wharf is poorly connected to the main road network and so it is not suitable for the export of minerals from other extraction sites or for the import of minerals into Essex." There are still some stockpiled materials left to ship off the Ballast Quay wharf. Historically, the wharf has served Fingringhoe Quarry, but it is outside the mineral permission control. The land has a Certificate of Lawful Existing Use or Development (CLEUD) which has established industrial use. Any new projects would require permission from the relevant planning authority. This is beyond consideration of this HRA. This element can therefore be screened out. For any new developments, it is not possible to conclude that	No LSE. This is a change from assessment of 2021 HRA.	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			there would be no LSE. Any new sites/projects may require project-level HRA if within an IRZ and may potentially require mitigation.		
S10: Protecting and enhancing the environment and local amenity	A	Screen out	Policy stating how the RMLP should protect the environment and could enhance, including Biodiversity Net Gain. It was screened out in the 2012 HRA. It includes supporting text about the Habitats Regulations and provides specific protection in relation to lorry movements and air quality. During the process of reviewing this HRA, section 3.184 of the RMLP has been proposed to include the following underlined words: "*Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment.*	2021: Paragraph 3.183 of supporting text updated regarding HRA approach, in line with HRA's recommendations, during the course of discussions with the MWPA. 2024: Paragraph 3.183 updated regarding HRA approach to clarify that only the applications which have the potential to impact on a Habitats site require a HRA. Therefore, S10 can remain screened out.	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			Currently where a proposal would result in an increase of 200 daily HGV movements within 200m of a ~~Natura 2000~~ a Special Area of Conservation (SAC), Special Protection Area (SPA) OR Ramsar site it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal." The amendments to the text could not cause LSE and are considered to be sufficiently minimal to allow the policy to remain screened out.		
S11: Access and Transport-ation	B	Screen in	S11 states "Proposals for the transportation of minerals by rail and/ or water will be encouraged subject to other policies in this Plan." It also provides a 'hierarchy of preference for transportation by road'. The proposed amendment to S11	2021: RMLP recognised that S11 can be expanded to be more prescriptive in order to achieve better outcomes. HRA 2021 requested that Policy DM1 included reference to the fact that a transport assessment may	Screen in

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			requires that, "Where the movement of minerals are by road, HGV movements shall not generate unacceptable impacts on …. Air quality (particularly in relation to any potential breaches of National Air Quality Objectives and impacts on any Air Quality Management Areas)." This is a positive aspiration. Air pollution caused by traffic is now recognised as a significant issue in general and Natural England require a greater level of scrutiny and scientific certainty. Potential Air Quality issues are highlighted as a risk in the SIPs for a number of Habitats sites, particularly Epping Forest SAC which is in close proximity to London and the M25 and critical loads are already exceeded. There are no Habitats sites near to Epping Forest. However, transport routes to and from Preferred Sites is not known. While lorry movements to	potentially need to include an assessment of air quality to avoid adverse effects on the integrity of Habitats sites. 2024: Para 4 bullet 2 now includes: "*If appropriate, information to demonstrate that the proposed development will avoid adverse air quality impacts on Habitats sites*," S11 now promotes sustainable transport including electric vehicles and use those roads in the upper tiers, defined as trunk roads (including motorways), strategic routes and main distributors. However, the Essex minerals sites support the London market and vehicles would therefore likely to be encourage to use the M25 which passes adjacent to Epping Forest SAC.	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			minerals sites may or not increase and further research is needed to ensure no LSE in combination with other plans and projects. Mitigation may be required, and more information is required for this purpose. Therefore, S11 needs consideration at AA. The 2021 HRA advised that detailed engagement with Natural England should be sought. The AA in 2021 explored issues surrounding air quality but it was not possible to reach a conclusion on whether the RMLP reviewed in 2021 could avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects. The Predicted Environmental Concentration (PEC) of emissions resulting from the	One of the Submitted Sites (A63: Patch Park, Abridge) is 3.5km east of Epping Forest SAC. Para 3.189 requires *"that effects on air quality shall be in accordance with published highway design guidance and national air quality objectives and strategies."* Para 3.195 states that minerals developments are "*expected to show that alternatives to road-based movements have been considered as part of a Transport Assessment or Transport Statement, particularly with regard to the use of existing transhipment facilities when appropriate*." Uncertainties regarding transportation routes to and from the quarries remain. Essex RMLP supports the London market and vehicles would therefore likely to be encouraged to use the M25 (in accordance with the hierarchy),	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			contribution of the RMLP access and transportation S11 policy is unknown. The HRA 2021 identified that the issue of air quality impacts needed further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It was not possible to reach a conclusion on whether the RMLP review of 2021 could avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.	which passes next to Epping Forest SAC. Further research is needed to ensure that there is no Likely Significant Effect. Given the uncertainties surrounding air quality, screen in S11 for further consideration at AA. No change to 2021 assessment.	
S12: Mineral Site Restoration and After-Use	C	Screen in	Policy dealing with options for restoration and after-use. The updated RMLP proposes to remove a hierarchical preference that forces low level restoration if it can be demonstrated that higher level restoration would have a more beneficial after-use. Biodiversity is still encouraged,	2021: recommended text from HRA 2021 for S12 now included in supporting text of para. 3.207. Part 5. (i) states proposals shall… ensure that: i) *Adverse effects on the integrity of local wildlife habitats, and wider ecological networks,*	Screen in

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			but S12 now also encourages public access and recreation as after use. There is a broader emphasis on green and blue infrastructure, health and well-being and sustainable transport than in the currently adopted RMLP'. This could create potential disturbance issues from recreation and air quality issues e.g. due to additional lorry movements to import infill material for restoration. Additional safeguards were proposed in the 2012 HRA in relation to A31 Maldon Road, Birch and A20 Sunnymead, Alresford with respect to avoidance of putrescible waste. No details have been submitted for A31 Maldon Road, Birch and so it is unknown, but possible, that waste could be imported as a	*including the hierarchy of international, national and locally designates sites are avoided, either alone or in combination with other plans and projects,"* The focus in previous iterations of the HRA has been in relation to restoration infilling, particularly with putrescible waste. However, a number of the newly Submitted Sites are relatively close to Habitats sites and, as recreation is supported as a restoration option, this could cause disturbance should they be allocated when the Plan progresses beyond Reg.18. Therefore, continue to screen in for further consideration at AA, particularly to explore whether additional supporting text required relating to recreation is required.	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			result of the proposed RMLP amendments in 2010. Mitigation was not embedded into the RMLP 2014. This is screened in, along with Preferred Site A31. Site A20 Sunnymead, Alresford already has planning permission. This site will receive inert waste only. A project-level HRA has screened out all LSE for this application. A20 has been screened out. Recreation as an after use has been screened out with respect to Preferred Sites as none are in close enough proximity to Habitats sites.		
4.0 The Approach to Identifying Preferred Mineral Sites for Primary Mineral Extraction (P1 and P2 dealt with individually below.)					
P1: Preferred Sites for Sand and Gravel	C	Screen in	This policy includes all of the Preferred Sites, i.e. 16 allocations on 10 sites, of which 13 are extensions to existing quarries	Polices P1 and P2 now under one heading called '*Policies P1 and P2 – Allocated Sites for Sand and Gravel and Silica Sand Extraction*'.	Screen in

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
Extraction			and three are new sites. The emerging RMLP 2021 is proposing to incorporate the Reserve Sites as Preferred Sites. All Preferred Sites without planning permission have been scoped in. The screening of Submitted and Preferred Sites is set out in Table 9 below. P1 is screened in as two Preferred Sites have been screened in for potential LSE without mitigation.	2021: Removal of Reserve Sites' 2024: Updates to reflect the new Plan period to 2040 and the outcomes of the Mineral Need Topic Paper to present the amount of sand, gravel, and silica sand tonnage being allocated in the Plan. The Council is currently assessing Submitted Sites and remaining undeveloped allocations from the 2014 RMLP to determine which sites should be selected as site allocations in the RMLP. The current draft RMLP for Reg. 18 consultation does not provide recommendations regarding which sites should be allocated. List of Preferred Sites therefore temporarily removed. Continue to Screen in as it is not	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				currently possible to screen out due to the uncertainty of the sites that will be included as Preferred Sites at Reg. 19. However, no further assessment in this HRA.	
P2: Preferred Site for Silica Sand Extraction	C	Screen in	P2 includes only one Preferred Site. The screening of Preferred Sites is set out in Table 9 below. This Site is and has hydrological connection to- Salary Brook which feeds into the River Colne. It is approximately 10km downstream from Colne Estuary SPA and Ramsar site- so possible requirement for mitigation measures.	2024: As for P1, the list of Preferred Sites for Silica Sand removed as Site allocations are not proposed to be presented within the Regulation 18 version of the Plan. RMLP explains why site allocations not included, and what the proposed approach is for identifying and consulting on site allocations moving forward. Continue to Screen in as it is not currently possible to screen out due to the uncertainty of the sites that will be included as Preferred Sites at Reg. 19.	Screen in

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
5.0 Development Management Policies					
DM1: Development Management Criteria	C	Screen in	DM1 was screened out by the 2012 HRA. The need to avoid adverse effects on the integrity of Habitats sites is included within the supporting text, but it is not explicit within any policy of the RMLP to cover all elements, including unforeseen or unknown elements, such as windfall sites. Policy DM1 includes requirements in relation to transport in paragraph 5.15. This paragraph encourages the carrying of material by water and rail wherever possible for environmental reasons. However, it does not recognise that most of the coast is internationally designated and barges could cause disturbance, and a potential LSE. Further	2021: Includes the effects that barges could cause to Habitats Sites. DM1 was amended to address the need to ensure that mineral development will not impact on the integrity of Habitats Sites. DM1 now includes 'adverse' in first para i.e. "*Proposals for minerals will be permitted subject to it being demonstrated that the development would not have an unacceptable adverse impact, including cumulative impact with other developments, upon:".* And DM1 includes: *<u>It must be ensured that there will be no adverse effect on the integrity of Habitats Sites (internationally or nationally important wildlife sites)</u>*	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			consideration is required with respect to transport, particularly in relation to potential air quality impacts. A transport assessment may be required. Therefore, DM1 needs further consideration, and potentially mitigation such as changes and additions. DM1 is therefore screened in to ensure no Likely Significant Effects and is carried forward to the Appropriate Assessment.	*either alone or in combination with other plans and projects in relation to all minerals development. This must be demonstrated through a project level Habitats Regulations Assessment, which will be required for any future proposals requiring a decision under the RMLP, which fall within a IRZ"* in the last para. HRA 2021 recommendation in section 5.206 now included: in Transport section of supporting text in DM1. It refers to the need to avoid adverse effects on integrity to the Essex coast and states that, "*A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats sites*". Paragraph 5.27 sets out hierarchical protection of sites and need for HRA. 'No adverse effect on the integrity of	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				Habitats sites' also included within DM1. Mitigation has now been embedded within. Therefore, no LSE. This is a change from 2021 HRA assessment.	
DM2: Planning Conditions and Legal Agreements	A	Screen out	General statement of policy. No LSE. It was screened out by the 2012 HRA. Policy DM2 includes the provision for "conditions and/or require legal agreements to mitigate and control the effects of the development and to enhance the environment." This could include the requirement of Construction Environment Management Plans (CEMPs) to address issues raised in this HRA through, for example, seasonal working, damping down of dust, screening	2024: Policy DM2 removed and text is included within the supporting text to Policy DM1 instead.	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			and measures to alleviate noise pollution.		
DM3: Primary and Secondary Processing Plant	C	Screen in	DM3 requires that it should be demonstrated that there would be no unacceptable impact upon the surrounding environment. However, it does not contain a requirement for project level HRA and avoidance of LSE. Therefore, it is not possible to conclude LSE without more information about the location of the facilities, or by ensuring that adequate mitigation is in place. DM3 was screened out by the 2012 HRA.	2021: Title of DM3 has been amended to 'Mineral development incorporating primary processing plant' as the policy relates to both primary processing plant and the wider development to which it relates. 2024: Text based on mineral transhipment sites, secondary processing facilities, coated stone plants, concrete and mortar products, and bagging plants, moved from S9 to DM3. DM3 redrafted to refer to both primary and secondary processing plants. Policy DM3 to be re-titled DM3 Mineral Development Incorporating Primary and	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				Secondary Processing Plants (DM4 removed). Mitigation has now been embedded within the Plan through DM1. Therefore, no LSE is predicted. This is a change from 2021 HRA assessment.	
DM4: Secondary Processing Plant	C	Screen in	DM4 was screened out by the 2012 HRA on the grounds that it does not promote or seek to deliver development it will not lead to a Likely Significant Effect on any Habitats sites. DM4 requires that it should be demonstrated that there would be no unacceptable impact upon the local environment. However, it does not contain a requirement for project level HRA and avoidance of LSE. Therefore, it is not possible to conclude LSE without more information about the location of the facilities, or by	2021: Title of DM4 amended to 'Mineral development incorporating secondary processing plant' as the policy relates to both secondary processing plant and the wider development to which it relates. 2024: Policy no longer exists. DM4 removed, and policy DM3 is redrafted to refer to both primary and secondary processing plants. Policy DM3 to be re-titled '*Mineral Development Incorporating Primary and Secondary Processing Plants'*. Therefore, no LSE. This is a change from assessment from 2021	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
			ensuring that adequate mitigation is in place.	HRA.	
6.0 Implement-ation, Monitoring and Review	C	Screen out	Policy that cannot lead to development or other change.	Remove Policy IMR1 and instead just include within the RMLP the supporting text and monitoring framework, presented in Table 7 of RMLP. Targets themselves cannot lead to change. No LSE. No change to 2021 HRA.	Screen out
IMR1: Implement-ation, Monitoring and Review	A	Screen out	Policy that cannot lead to development or other change.	2021: A number of amendments required to the Monitoring Framework. Three indicators, namely those relating to monitoring building sand separately to concreting sand, the contribution made by marine sand to overall aggregate supply and the number of applications proposing non-road modes of transport of material, are proposed to be	Screen out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				removed. Remove Policy IMR1, and instead just include within the RMLP the supporting text and the monitoring framework presented in Table 7 of RMLP. Targets cannot by themselves lead to change. No LSE. No change to 2021 HRA.	
8.0 Appendices					
Appendix One- Site profiles	A	Scoped out	Background information	2021: Re-allocation of Reserve Sites to Preferred Sites. Site profiles to be updated ahead of a further public consultation. HRA 2021 requested that a new criterion was added to the Site Profile for A31 Maldon Road, Birch to note the need for consideration to be given to the design, layout and	Scoped out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				phasing of works and restoration in order to protect the proximal watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site. Sites listed as Preferred Sites which have been granted planning permission since the RMLP was adopted have been removed. Sites allocated but where planning permission has yet to be granted will be retained, provided the allocation is carried forward into the future Plan, and the Appendix will be supplemented with pro-formas for additional sites that are proposed for allocation. 2024: It is proposed to remove Appendix One for the Reg18 consultation as this RMLP will not be presenting Preferred Sites. However, Appendix One will be included as part of the	

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
				next consultation. Scope out in as it is not currently included within current version of RMLP.	
Appendix Two - The Implementation of Mineral Resource and Infrastructure Safeguarding Policy	A		Not included in version previously assessed for HRA 2021.	2021: Appendix 2 now entitled: Profiles for Existing and Proposed Transhipment Sites It is proposed to remove this Appendix and instead report on the status of transhipment sites through the Annual Monitoring Report (AMR) and Policy Map, which can be more regularly updated than the RMLP. Not within scope as Appendix 2 has been removed.	Scoped out
Appendix Three - Additional Minerals Planning	A		Not included in version previously assessed for HRA 2021.	2021: Appendix 3 now entitled: Profiles for Strategic Aggregate Recycling Sites The proposed revisions to Policy S5,	Scoped out

Policy/ element of RMLP	Category A, B or C, as assessed in 2021?	HRA 2021's view on LSE on Habitats Sites- Screen in/out?	Assessment and Justification in HRA 2021	Summary of changes to RMLP post 2021 review and consultation; and proposed amendments in 2024 for Reg. 18 consultation. Revised HRA Screening Assessment.	HRA 2024's view on element of RMLP Screen in/out?
Context				all recycling facilities permitted by the MPA and subsequently set out in the AMR and Policy Map are to be safeguarded. Therefore, this Appendix was proposed to be removed from the RMLP and publish this information through the AMR and Policy Map which can be more regularly updated than the RMLP. Not within scope as Appendix 3 has been removed.	

Screening of Submitted Sites (from the Plan alone)

3.53. In 2022, the Council undertook two 'call for sites' exercises which invited sites to be submitted for consideration as potential future minerals development site allocations in the RMLP. Fifty-two sites were submitted for consideration. This HRA includes a screening assessment of these Submitted Sites. The Council is currently assessing these newly Submitted Sites and the remaining undeveloped allocations from the 2014 Essex RMLP to decide which sites should be selected as site allocations in the RMLP for 2025 to 2040. The first stage of assessment has been completed and is presented within the 'Assessment of Candidate Sand and Gravel Sites' report. The Assessment can be viewed on the ECC website within the RMLP evidence base.

3.54. This HRA 2024 has identified thirty-two Submitted Sites as being needing to be taken forward to AA should they be considered for incorporation as preferred sites in the next stage of the RMLP.

3.55. There are a number of Submitted Sites which are located relatively close to Habitats sites. The nearest sites are A67: Church Farm - Alresford (A16), A71: Lodge Farm - Alresford (A19) and A74: Thorrington Hall Farm (A21) which are all less than 500 metres from the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC. These generally have the highest potential to result in LSE from several impact pathways. This is considered in more detail below, with reference to potential impact pathways.

Impact to features (qualifying species) outside the protected site boundary:

3.56. Fifteen Submitted Sites have been included as having the potential to support qualifying bird species outside of the Habitats site for which they are listed. The birds included were Brent Goose, Lapwing and Golden Plover and Hen Harrier. The distribution of qualifying bird species is generally not far from the coastal habitats on which they rely for feeding, loafing, breeding and roosting. Lapwing and Golden Plover are the only two which are likely to use suitable land beyond 2km from the coastal areas.

3.57. The Submitted Sites included are:

- A31: Maldon Road, Birch
- A61: Heckfordbridge
- A62 Heckfordbridge
- A64 Land East of Asheldham Quarry
- A65 Land South of Asheldham Quarry
- A66: White House Farm - Woodham Walter (A44)

- A67: Church Farm - Alresford (A16)
- A68: Crabtree Farm - Great Bentley
- A69 Frating Hall (A17)
- A71 Lodge Farm - Alresford (A19)
- A74: Thorrington Hall Farm (A21)
- A79: Crown Quarry - North of Wick Lane
- A85: Martells - North of Frating Road (East)
- A87: Martells - East of Slough Lane
- A88: Gurnhams Farm

Disturbance to habitats/ species:

3.58. Three Submitted Sites have been included as having the potential to disturb features of Habitats sites and could also affect the condition of the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC due to their proximity to relevant Habitats sites. This includes recreational disturbance, dust, noise and lighting. These Submitted Sites are:

- A67: Church Farm - Alresford (A16)
- A71: Lodge Farm - Alresford (A19)
- A74: Thorrington Hall Farm (A21)

Water Quality

3.59. There are a number of Submitted Sites near to watercourses which feed into Salary Brook and the Roman River, both of which connect to the River Colne The following five sites are close enough for there to be potential for LSE alone and have hydrological connectivity to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC:

- A67 Church Farm - Alresford (A16)
- A68: Crabtree Farm - Great Bentley
- A69: Frating Hall (A17)
- A71: Lodge Farm - Alresford (A19)
- A74: Thorrington Hall Farm (A21)

3.1. Other Submitted Sites have been assigned as likely to result in non-significant impacts (Category B Figure 4: Screening Criteria) and should then be considered cumulatively with other Submitted Sites. Many are 10 -20 kilometres from the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC so they have

been screened out for further assessment alone as, based on professional judgement, it is considered over precautionary to screen them in individually. They are considered in the section below regarding the cumulative effects through combining insignificant effects from the RMLP alone.

3.2. Two sites are near to watercourses which feed into the Dengie SPA and Ramsar and Essex Estuaries SAC, i.e.:

- A64: Land East of Asheldham Quarry
- A65: Land South of Asheldham Quarry

3.3. Two sites are near to watercourses which feed into the Blackwater estuary, i.e.:

- A58: Little Smiths – Danbury
- A66: White House Farm - Woodham Walter (A44)

3.4. In addition, eleven Submitted Sites lie within the Blackwater valley, but are more than 10km from the Blackwater SPA and Ramsar site and the Essex Estuaries SAC. They have been screened out for further assessment alone as it would be over precautionary to screen them in individually. They are considered in the section below regarding the cumulative effects through combining insignificant effects from the RMLP alone.

Water Quantity

3.5. There are no Submitted Sites which are close enough to result in Likely Significant Effect to the hydrology of the two Habitats sites scoped in with respect to Water Quantity, i.e. Epping Forest SAC or Lee Valley SPA and Ramsar site.

3.6. Therefore, this impact pathway can be screened out.

Air Quality

3.7. Air quality is considered above, in the discussion for Policy S11 Access and Transportation which is screened in due to concerns relating to air quality impacts from traffic upon Habitats sites. The Predicted Environmental Concentration (PEC) of emissions resulting from the contribution of the RMLP access and transportation S11 policy is unknown. The HRA (Appropriate Assessment) produced for the RMLP review in 2021 in 2021 advised that detailed engagement with Natural England should be sought and further research was needed; this research is still required.

3.8. One Submitted Site is located within 200 metres of the Colne Estuary SPA and Ramsar and Essex Estuaries SAC, i.e. A71: Lodge Farm - Alresford (A19). Two more Sites are within 500 metres of these Habitats sites (A67: Church Farm - Alresford (A16) and A74: Thorrington Hall Farm (A21)). Although A67 and A74

are beyond the 200 metres parameter set out in the National Highways guidance, air movement near the coast is more varied and complex. These three are screened in for further consideration.

3.9. Another Submitted Site is situated 3.5 km from Epping Forest SAC, which is known to be particularly affected by air pollution i.e. A63: Patch Park, Abridge. Epping Forest SAC is in 'unfavourable' condition due to nitrogen deposition. While transport routes to and from any future minerals sites is not known, the Essex RMLP supports the London market and vehicles are therefore likely to be encouraged to use the M25 (in accordance with the transport hierarchy), which passes adjacent to Epping Forest SAC. A63 should be considered in combination at Appropriate Assessment.

3.10. It is therefore not possible to rule out a Likely Significant Effect on the grounds of air quality impacts resulting from the above Submitted Sites from the RMLP alone or in combination with other plans and projects.

3.11. Table 7: *Screening of Submitted Sites* below lists the Submitted Sites and sets out the screening summary for each one.

Table 7: Screening of Submitted Sites

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A6	Bradwell Quarry	A	None	Screen out. No LSE predicted.	Undeveloped allocation remaining from Essex RMLP 2014. Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site. Site is c.13km from nearest Habitats site (Abberton Reservoir SPA), but there is no pathway of impact to Abberton Reservoir. A6 is nearly 1300 metres from the River Blackwater. River Blackwater which feeds into the Blackwater Estuary 24km downstream. General protection measures would be embedded into any planning permissions. The potential in combination impacts of any additional effects from water quality would be unlikely due to the distance from the River itself and are considered over-precautionary.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A22	Crumps Farm RMLP Allocation	A	None	Screen out. No LSE predicted.	Undeveloped allocation remaining from Essex RMLP 2014. Not within a minerals SSSI IRZ for any Habitats site within scope. This is adjacent to the River Roding which travels southwards and eventually joins the River Thames. This creates an impact pathway to the Thames Estuary and Marshes SPA. Given the distance it is not expected to result in LSE to any Habitats site resulting from water quality, based on professional judgement.
A23	Crumps Farm RMLP Allocation	A	None	Screen out. No LSE predicted.	Undeveloped allocation remaining from Essex RMLP 2014. Not within a minerals SSSI IRZ for any Habitats site within scope. This is near to the River Roding which travels southwards and eventually joins the River Thames. This creates an impact pathway to the Thames Estuary and Marshes SPA. Given the distance it is not expected for LSE to any Habitats site resulting from water quality, based on professional judgement.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A31	Maldon Road, Birch	C	Water Quality, functionally-linked land, disturbance to species (breeding cormorants)	Screen in	Undeveloped allocation remaining from Essex RMLP 2014. Site A31 is within the minerals SSSI IRZ of Abberton Reservoir SPA and Ramsar site which is located approximately 2.5 km south-east of the site. Intervening land use is predominantly arable fields with hedgerows and the village of Birch; use of the Site as functionally-linked land is possible. This is an additional impact pathway for the 2024 HRA. Potential for disturbance to nests of SPA qualifying features (breeding cormorants) from gulls and crows if putrescible waste is used. Previous RMLP HRA advised that there should be no AEOI caused by any infilling using putrescible waste for this reason. This is now included in the Restoration section of supporting information for S12. A31 is a low-level 'Flagship site' under S12 of the 2014 RMLP regarding restoration, i.e. Priority habitat creation. There is no direct hydrological connection to Abberton Reservoir and no hydrological connection to Layer Brook before it feeds into Abberton Reservoir from the south. Layer Brook leaves

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Abberton Reservoir at its northern point and joins the Roman River. The small watercourse running through the site joins the Roman River eventually feeds into the River Colne. This creates an impact pathway with the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.14km downstream. A precautionary approach is taken and so mitigation may be required. The HRA 2021 recognised this in relation to water quality issues and made recommendations. These were referenced in Appendix One of the RMLP 2023, which is not included in this Reg.18 version of the RMLP.
A47	Bradwell- Monk's Farm	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats Site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A48	Bradwell - Grange Farm	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The northern boundary of the Site runs roughly parallel with the River Blackwater and is less than 200m from the River at its closest point. The river also turns southwards and comes within 300 m of the Site's eastern boundary. There

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					is hydrological connectivity with the River via small watercourses. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 16 km downstream. However, the distance is c.16 km downstream and it would therefore be over precautionary for LSE.
A49	Colemans Farm - Hill Broad Farm	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Blackwater and there is hydrological connectivity with the River via small watercourses. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 12km downstream.
A50	Colemans Farm - Eastern extension (Appleford Farm)	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is adjacent to the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 13km downstream.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A51	Colemans Farm - North extension (Hill Broad Farm)	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is adjacent to the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 12km downstream.
A52	Colemans Farm - Southern extension	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is adjacent to the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 12km downstream.
A54	Whiteheads – Witham	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is c.720 metres (and entrance to the Site is c.500m) from the River Brain which feeds into the River Blackwater. It is therefore considered to be over precautionary for LSE due to the distance from the river and scale of the Site.
A55	Sheepcotes Southern	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Habitats site.
A56	Sheepcotes Western	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A57	Chalk End – Roxwell	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A58	Little Smiths – Danbury	C	Water quality	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope. It is c.5km directly from these sites; the intervening land includes Maldon town, arable fields and woodland. The adjacent watercourse feeds into the River Chelmer to the north of Site A58. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 8.5km downstream.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A59	Lowleys Farm – Chelmsford	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Ter which creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC via the River Chelmer. However, the distance is over 19km downstream and it would therefore be over precautionary for LSE.
A60A	Shellow Cross Farm (A60) – Chelmsford	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site. Approx. 23km from closest Habitats site- Blackwater Estuary SPA and Ramsar.
A60B	Shellow Cross Farm (A60) – Chelmsford	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site. Approx. 23km from closest Habitats site - Blackwater Estuary SPA and Ramsar.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A61	Heckfordbridge	C	Water quality. Functionally linked-land	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is c.3.4km northwest of Abberton Reservoir SPA and, Ramsar site. In addition, the nearby Roman River – which would be crossed by the conveyor- eventually feeds into the River Colne. This creates an impact pathway with the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.13km downstream. Lapwings are one of the component species of the qualifying assemblage for Abberton Reservoir SPA; a survey undertaken by the site proposer found them to present on the Site with a peak count of 6. Use of the Site as functionally-linked land is possible.
A62	Heckfordbridge	C	Water quality. Functionally linked-land.	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is c.3.km northwest of Abberton Reservoir SPA and, Ramsar site. In addition, the nearby Roman River – which would be crossed by the conveyor- eventually feeds into the River Colne. This creates an impact pathway with the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.13km downstream.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Lapwing are one of the component species of the qualifying assemblage for Abberton Reservoir SPA; a survey undertaken by the site proposer found them to present on the Site with a peak count of 6. Use of the Site as functionally-linked land is possible.
A63	Patch Park, Abridge	C	Air Quality	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope, thought close to the IRZ for Epping Forest SAC which is, 3.5km to the west; this Habitats site is vulnerable to air pollution. It therefore needs to be considered at AA.
A64	Land East of Asheldham Quarry	C	Water quality. Functionally linked land.	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope. However, it is situated just outside several IRZs as it is located low-lying flat land in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, all of which are internationally designated. The Blackwater Estuary SPA and Ramsar site is 3 km to the north. The Dengie SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SPA and Ramsar site is 5.8km to the south. These Habitats sites also overlap geographically within the Essex Estuaries SAC.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					There is a watercourse less than 300m east of the Site on the far boundary of the next field. This drains into a main river c.500 metres to the south. From here it makes its way eastwards towards the coast. This creates an impact pathway with the Dengie SPA and Ramsar site and the Essex Estuaries SAC. Dark-bellied Brent Goose is a qualifying feature of the Dengie SPA and they graze on fields near the coast during the winter months during migration; therefore potential functionally-linked land.
A65	Land South of Asheldham Quarry	C	Water quality. Functionally linked land	Screen in. Yes, potential for LSE.	Not within a minerals SSSI IRZ for any Habitats site within scope. However, it is situated just outside of several IRZs as it is located on low-lying flat land in the middle of the Dengie peninsula which is surrounded on three sides by coast and estuaries, which are all internationally designated. The Blackwater Estuary SPA and Ramsar site is 3 km to the north. The Dengie SPA and Ramsar site is 4.5km to the east. The Crouch and Roach Estuaries SPA and Ramsar site is 5.8km to the south. These Habitats sites also overlap geographically within the Essex Estuaries SAC. There is a main river c.570 metres to the south-

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					west and from here it makes its way eastwards towards the coast. It is not known whether there is any hydrological connectivity between the Site and the river and hence onwards to the Dengie SPA and Ramsar site. Although some distance from the Site, any watercourse would create a potential pollution pathway between A65 and these Habitats sites. Dark-bellied Brent Goose is a qualifying feature of the Dengie SPA and they graze on fields near the coast during the winter months during migration; therefore potential functionally-linked land.
A66	White House Farm - Woodham Walter (A44)	C	Water quality. Functionally-linked land	Screen in. Yes, potential for LSE.	Site A66 is partly within the SSSI minerals IRZ for the Blackwater Estuary SPA and Ramsar site and the Essex Estuaries SAC. It is 2.5km directly from these sites; the intervening land includes Maldon town and arable fields. The watercourse to the west of the Site feeds into the River Chelmer to the north of Site A66. This creates an impact pathway with the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 7km downstream. Dark-bellied Brent Goose is a qualifying feature of

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					the Blackwater Estuaries SPA and they graze on fields near the coast during the winter months during migration; therefore potential functionally-linked land.
A67	Church Farm - Alresford (A16)	C	Water quality, functionally-linked land, air quality, disturbance.	Screen in. Yes, potential for LSE.	Site 67 lies within the SSSI minerals IRZ for the Colne Estuary SPA, and Ramsar site, the Essex Estuaries SAC which are located 400 metres to the south. The (existing) processing area to the east is at least as close. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Dark-bellied Brent Geese, Common Redshank, Hen Harrier, and general water bird assemblage. Golden Plover is one of the designation features for the Colne Estuary Ramsar site. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration and Golden Plover also use coastal, farmland and grassland habitats during the winter. Therefore, it is possible that the Site could be used by these species as functionally-linked land. Sixpenny Brook is c.100 metres to the south-east of the site which leads into the Colne estuary via

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Alresford Creek. The Site will be connected hydrologically through ground and surface water to the Colne estuary Habitats sites due to its proximity to them. The Site is also close enough to consider LSE arising from disturbance from quarrying and after uses, such as those arising from noise, light, dust, vibration, human presence and vehicular traffic.
A68	Crabtree Farm - Great Bentley	C	Water quality, functionally-linked land	Screen in. Yes, potential for LSE.	Site A68 is not within a minerals SSSI IRZ for any Habitats site within scope. However, the Site is located c. 3.4 kilometres from the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC. The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site. Dark-bellied Brent Geese are a qualifying feature of the Colne Estuary SPA and they graze on fields near the coast during the winter months during migration; therefore potential functionally-linked land. A wet drainage ditch borders the northern boundary and drains into Bentley Brook. Bentley Brook, which is c. 50 metres west, leads southward into the Colne estuary via Brightlingsea Creek.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					This creates an impact pathway to the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are over 4km downstream. The E.A. Catchment Data Map shows that the Site is located partially within the Catchment for Holland Brook (which heads eastward towards Holland-on-Sea on the east coast), the impact pathways to this watercourse are not known.
A69	Frating Hall (A17)	C	Water quality, functionally-linked land.	Screen in. Yes, potential for LSE	Site A69 is 2.3 kilometres from Colne Estuary SPA, Ramsar site and Essex Estuaries SAC. It is partially within the minerals SSSI IRZ for the Colne Estuary SPA and Ramsar site. It is located between Tenpenny Brook and Bentley Brook. There is potential to affect water quality of the Colne Estuary and tributary watercourses via surface and ground water. Dark-bellied Brent Goose is a qualifying feature of the Colne Estuary SPA and they graze on fields near the coast during the winter months during migration; therefore, potential functionally-linked land.
A71	Lodge Farm - Alresford	C	Water quality, functionally-linked land,	Screen in. Yes, potential for	Site A71 lies within the SSSI minerals IRZ for the Colne Estuary SPA, and Ramsar site, the Essex Estuaries SAC which are located 103 metres to the

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			disturbance.	LSE.	south. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Dark-bellied Brent Goose, Common Redshank, Hen Harrier, and general water bird assemblage. Golden Plover are one of the designation features for the Colne Estuary Ramsar site. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration and Golden Plover also use coastal, farmland and grassland habitats during the winter. Therefore, it is possible that the Site could be used by these species as functionally-linked land. Sixpenny Brook is c.160 metres to the north-east of the site which leads into the Colne estuary via Alresford Creek and is connected by a watercourse. The access route also crosses Sixpenny Brook. The Site will be connected hydrologically through ground and surface water to the Colne estuary Habitats sites due to its proximity to them. The Site is also close enough to consider LSE arising from disturbance from quarrying and after

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					uses, such as those arising from noise, light, dust, vibration, human presence and vehicular traffic.
A72	Martells - Southern extension	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites	Not within a minerals SSSI IRZ for any Habitats site within scope. A watercourse immediately north of the Site runs west and joins Salary Brook and this, in turn, feeds into the River Colne. This creates an impact pathway to the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.10.5km downstream.
A73	Martells - Western extension	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Site A73 is not within the SSSI minerals Impact Risk Zone for any Habitats sites within scope. It is c.5.3km south of the Stour and Orwell Estuaries SPA and Ramsar site. The Site is adjacent to Salary Brook and this in turn feeds into the River Colne. This creates an impact pathway to the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.10km downstream.
A74	Thorrington Hall Farm (A21)	C	Water quality, functionally-linked land, air	Screen in. Yes, potential for	Site A74 lies within the SSSI minerals IRZ for the Colne Estuary SPA, and Ramsar site and the Essex Estuaries SAC. It is located almost between Alresford Creek and Brightlingsea Creek, which

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			quality, disturbance	LSE.	are components of the Colne estuary. It is 280 metres from the Colne Estuary SPA and Ramsar site and 330 metres from the Essex Estuaries SAC at their closest points. Intervening land to the creeks is predominantly farmland, although there buildings- mainly residential Thorrington- lining Brightlingsea Road at the closest point. Brightlingsea town is located to the south. The Colne Estuary SPA is designated for breeding Common Pochard, Ringed Plover and Little Tern and wintering Brent Geese, Common Redshank, Hen Harrier and general water bird assemblage. Golden Plover are one of the designation features for the Colne Estuary Ramsar site. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration and Golden Plover also use coastal, farmland and grassland habitats during the winter. Therefore, it is possible that the Site could be used by these species as functionally-linked land. A watercourse cuts through the Site which feeds into Brightlingsea Creek. This creates an impact pathway to the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					The Site is also close enough to consider LSE arising from disturbance from quarrying and after uses, such as those arising from noise, light, dust, vibration, human presence and vehicular traffic.
A75	Land at Orford, Ugley - Bollington Hall Ltd	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A76	Elsenham (A25)	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A77	Westward Extension to Highwood Quarry - Little Easton	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A79	Crown Quarry - North of Wick Lane	C	Functionally-linked land	Screen in. Yes, potential for LSE	Site A79 is partially within the SSSI minerals Impact Risk Zone for Stour and Orwell Estuaries SPA and Ramsar site. The intervening landscape between the Site and

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Stour and Orwell Estuaries SPA and Ramsar site is mainly arable fields with small villages and plant nurseries. Dark-bellied Brent Goose and Lapwing are both listed as being part of the waterbird assemblage for the Stour and Orwell Estuaries SPA. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration on migration. Lapwing are ground nesting birds which breed and feed in the UK and use marine and intertidal, farmland, wetland, grassland habitats. Therefore, it is possible that the Site could be used by these species as functionally-linked land. There is hydrological connectivity between the Site and Ardleigh Reservoir. Water passes through the Reservoir before it feeds into Salary Brook which, in turn, joins into the River Colne. The Site is over 12km upstream of the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC. Given the distance and intervening reservoir it is not expected for LSE to Colne Estuary SPA and Ramsar site and Essex Estuaries SAC resulting from water quality, based on professional judgement.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A80	Crown Quarry - South of Wick Lane	A	None	Screen out. No LSE predicted.	Site A79 is just outside of the SSSI minerals Impact Risk Zone for Stour and Orwell Estuaries SPA and Ramsar site. here are no watercourses between the Site and Ardleigh Reservoir, but they are 180 metres apart and the intervening landscape comprises two waterbodies. It is therefore considered possible that there would be hydrological connectivity between the Site and Ardleigh Reservoir via ground water and surface water. Water passes through the Reservoir before it feeds into Salary Brook which, in turn, feeds into the River Colne. The Site is over 12km upstream of the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC. Given the distance and intervening reservoir it is not expected for LSE to Colne Estuary SPA and Ramsar site and Essex Estuaries SAC resulting from water quality, based on professional judgement.
A82	Colemans Farm - Elm Springs Extension	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Blackwater which is 140 metres to the northwest of the Site at its closest point and there is hydrological connectivity with the River via small watercourses. This creates an impact pathway to

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 12km downstream.
A83	Colemans Farm - Hole Farm	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is adjacent to the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 14.5km downstream.
A84	Colemans Farm - Appleford Farm North Extension	B	Water quality	Screen in. Yes, potential for LSE cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is adjacent to the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 13.5km downstream.
A85	Martells - North of Frating Road (East)	C	Functionally-linked land	Screen in. Yes, potential for LSE	Site A85 is within the minerals SSSI IRZ for Stour and Orwell Estuaries SPA and Ramsar site which is c.3.7km north of the Site. The intervening landscape between the Site and Stour and Orwell Estuaries SPA and Ramsar site is mainly arable fields with small villages and plant nurseries. Dark-bellied Brent Geese and Lapwing

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					are both listed as being part of the waterbird assemblage for the Stour and Orwell Estuaries SPA. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration on migration. Lapwing are ground nesting birds which breed and feed in the UK and use marine and intertidal, farmland, wetland, grassland habitats. Therefore, it is possible that the Site could be used by these species as functionally-linked land. The Site is within the Tenpenny Brook Water Catchment Area which feeds southwards toward the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC and is located c.9km to the south. There is no clear hydrological connectivity- i.e. water pollution pathway- between Site A85 and these Habitats sites. Given the distance and lack of nearby watercourses it is not expected for LSE to Colne Estuary SPA and Ramsar site and Essex Estuaries SAC resulting from water quality, based on professional judgement.
A86	Martells - North of Frating Road (West)	C	Functionally-linked land	Screen in. Yes, potential for	Site A86 is within the minerals SSSI IRZ for Stour and Orwell Estuaries SPA and Ramsar site which is c.3.7km north of the Site.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
				LSE	The intervening landscape between the Site and Stour and Orwell Estuaries SPA and Ramsar site is mainly arable fields with small villages and plant nurseries. Dark-bellied Brent Goose and Lapwing are both listed as being part of the waterbird assemblage for the Stour and Orwell Estuaries SPA. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration on migration. Lapwing are ground nesting birds which breed and feed in the UK and use marine and intertidal, farmland, wetland, grassland habitats. Therefore, it is possible that the Site could be used by these species as functionally-linked land. The Site lies within the Tenpenny Brook and the Salary Brook Water Catchment Areas which feed southwards toward the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC and is located at least 9km to the south. The Site is 260m from the nearest known watercourse and this feeds into Salary Brook, passing near to several of the Martells Quarry past, existing and proposed sites (particularly A73), but there was no known watercourse connecting A86

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					to the watercourse. There is no clear hydrological connectivity- i.e. water pollution pathway- between Site A86 and these Habitats sites. Given the distance and lack of nearby watercourses it is not expected for LSE to Colne Estuary SPA and Ramsar site and Essex Estuaries SAC resulting from water quality, based on professional judgement.
A87	Martells - East of Slough Lane	C	Functionally-linked land	Screen in. Yes, potential for LSE.	Site A87 lies just within the SSSI minerals IRZ for the Stour and Orwell Estuaries SPA and Ramsar site which are located c.5km to the north-east. The intervening landscape between the Site and Stour and Orwell Estuaries SPA and Ramsar site is mainly arable fields with small villages and plant nurseries. Dark-bellied Brent Goose and Lapwing are both listed as being part of the waterbird assemblage for the Stour and Orwell Estuaries SPA. Dark-bellied Brent Geese graze on fields near the coast during the winter months during migration. Lapwing are ground nesting birds which breed and feed in the UK and use marine and intertidal, farmland, wetland, grassland habitats. Therefore, it is possible that the Site could be used by these

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					species as functionally-linked land. The Site lies within the Tenpenny Brook and the Salary Brook Water Catchment Areas which feed south/south-westwards toward the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC and is located at least 9km to the south. There is no clear hydrological connectivity - i.e. water pollution pathway- between Site A87 and these Habitats Sites, though it potentially feeds into Bromley Brook. Given the distance and lack of nearby watercourses it is not expected for LSE to Colne Estuary SPA and Ramsar site and Essex Estuaries SAC resulting from water quality, based on professional judgement.
A88	Gurnhams Farm	C	Functionally-linked land	Screen in. Yes, potential for LSE	Site A88 is 5.1 kilometres from the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC and is 5.8km from Hamford Water SPA, SAC and Ramsar. It is not within a minerals SSSI IRZ for any Habitats site within scope. The Site may act as functionally-linked land for birds which are qualifying features of the Colne Estuary SPA and Ramsar site and Hamford Water SPA and Ramsar. Dark-bellied Brent Goose is a qualifying feature of the Colne Estuary SPA and

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					Hamford Water SPA and they graze on fields near the coast during the winter months during migration; therefore, potential functionally-linked land. Watercourses at the Site appear to initially drain northwards and connect with a watercourse at c.60m which drains south-eastwards. It is in the Holland Brook Catchment Area. Therefore, it is likely that water drains towards the east coast and not towards any Habitats site.
A89	Covenbrooke Hall Farm	A	None	Screen out. No LSE predicted	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A90	Rayne Quarry - Northern Extension	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
A91	Land at Chignal St James	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Can which creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC via the River Chelmer. However,

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
					the distance is c.30km downstream and the opposite side of Chelmsford City and it would therefore be over precautionary for LSE.
A92	Land at Pattiswick Hall Farm - Small Site	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Blackwater which creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 19km downstream.
A93	Land at Pattiswick Hall Farm - Full Site	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is near to the River Blackwater which creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 19km downstream.
A94	Land at Highfields Farm	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. The Site is c.250 metres from the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 15km downstream.

Site No.	Site Name	Category A, B or C?	Potential Impact Pathway	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
A95	Land at Bellhouse Farm South	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Not within a minerals SSSI IRZ for any Habitats site within scope. In addition, the adjacent Roman River eventually feeds into the River Colne. This creates an impact pathway with the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC which are c.14km downstream. The Site is 4.5km northwest of Abberton Reservoir SPA and Ramsar site.
A96	Rayne Quarry - Southern Extension	A	None	Screen out. No LSE predicted.	Not within a minerals SSSI IRZ for any Habitats site within scope. No impact pathways have been identified between the Submitted Site and any Habitats site.
D7	Land at Pond Farm (transhipment site)	B	Water quality	Screen in. Yes, potential for LSE, cumulatively with other sites.	Transhipment site only north-west of A12; no mineral extraction. The Site is not within a minerals SSSI IRZ. The Site is not within a minerals SSSI IRZ for any Habitats site within scope. The Site is 1.1km west of the River Blackwater. A watercourse leads from the southern boundary of the Site into the River Blackwater. This creates an impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC which are approximately 14.5km downstream of the Site.

Considering Cumulative Effects through Combining Insignificant Effects from the RMLP alone

3.12. The in-combination provision takes account of cumulative effects. Where there is a part of the RMLP that could have some effect, but this is not likely to be significant, it needs to checked with other insignificant effects from the RMLP to ensure that residual effects are properly assessed. Subsequently, aspects of the RMLP may need to be checked in combination with the insignificant effects of other plans and projects.

3.13. Relevant polices and sites are indicated as category B (Figure 4: Screening Criteria) in Tables 6 and 7 above. A number of Submitted Sites have been identified in this category; for water quality. This is because the spatial distribution of the Submitted Sites collectively may result in LSE. There are many Sites near to the River Blackwater which creates a potential hydrological impact pathway to the Blackwater Estuaries SPA and Ramsar site and Essex Estuaries SAC.

3.14. Eleven Submitted Sites are situated within the River Blackwater valley, and while they are mostly at some distance (over 10km) from the Blackwater SPA and Ramsar site and the Essex Estuaries SAC they could collectively create an effect to water quality. Furthermore, they could have an effect in combination with other plans and projects. Therefore, they have been screened in for further assessment.

- A48: Bradwell - Grange Farm
- A49: Colemans Farm - Hill Broad Farm
- A50: Colemans Farm - Eastern extension (Appleford Farm)
- A51: Colemans Farm - North extension (Hill Broad Farm)
- A52: Colemans Farm - Southern extension
- A82: Colemans Farm - Elm Springs Extension
- A83: Colemans Farm - Hole Farm
- A84: Colemans Farm - Appleford Farm North Extension
- A92: Land at Pattiswick Hall Farm - Small Site
- A93: Land at Pattiswick Hall Farm - Full Site
- D7: Land at Pond Farm (transhipment site)

3.15. Six Submitted Sites are near to watercourses which feed into Salary Brook and the Roman River, both of which connect to the River Colne. While many are some distance from the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC they could collectively create an effect. Furthermore, they could have an effect in combination with other plans and projects. Therefore, they have been screened in for further assessment.

- A31; Maldon Road, Birch
- A61: Heckfordbridge
- A62: Heckfordbridge
- A72: Martells - Southern extension
- A73: Martells – Western extensionA95: Land at Bellhouse Farm South

3.16. The distances downstream are over 10km- and it could therefore be over precautionary to screen the sites individually for LSE alone. However, as they may cause insignificant effects alone, there is the potential for effects to water quality from the cumulative effects of multiple mineral sites feeding into these estuaries. Therefore. these Submitted Sites should be carried forward to be considered if they are being proposed as Preferred Sites at the next stage of the RMLP. The water quality pathway is already identified as needing to be taken forward to Appropriate Assessment alone, as set out above. At AA, mitigation measures may need to be considered such as the need for appropriate phasing across Preferred Sites, as well as strict measures during operations.

3.17. Table 8 below lists the policies that have the potential to cause a Likely Significant Effect and their Impact Pathways and Table 9 shows the Submitted Sites that have the potential to cause a Likely Significant Effect.

Table 8. Policies that have the Potential to Cause a Likely Significant Effect and their Impact Pathways

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality
S1: Presumption in favour of sustainable development	x	x	x	x	x
S2: Strategic priorities for minerals development	x	x	x	x	x
S3: Climate change	x	x	x	x	x

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality
S4: Reducing the use of mineral resources	x	x	x	x	x
S5: Creating a Network of Aggregate Recycling Facilities, New Secondary Processing and New Transhipment Sites	x	x	x	x	x
S6: Provision for sand and gravel extraction	x	x	x	x	x
S7: Provision for industrial mineral	x	x	x	x	x
S8: Safeguarding mineral resources and mineral reserves	x	x	x	x	x
S9: Safeguarding mineral extraction sites and other Mineral Infrastructure	x	x	x	x	x

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality
S10: Protecting and enhancing the environment and local amenity	x	x	x	x	x
S11: Access and Transportation	x	x	✓	x	✓
S12: Mineral Site Restoration and After-Use	x	✓	✓	x	✓
Policy P1 - Preferred and Reserve Sites for Sand and Gravel Extraction	x	✓	✓	✓	✓
Policy P2 - Preferred Site for Silica Sand Extraction	x	✓	✓	✓	✓
DM1: Development Management Criteria	x	x	x	x	x
DM2: Planning Conditions and Legal Agreements	x	x	x	x	x
DM3: Primary Processing	x	x	x	x	x

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality
Plant					
DM4: Secondary Processing Plant	x	x	x	x	x

Table 9. Submitted Sites that have the Potential to Cause a Likely Significant Effect and their Impact Pathways

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
A6: Bradwell Quarry	x	x	x	x	x
A22: Crumps Farm RMLP Allocation	x	x	x	x	x
A23: Crumps Farm RMLP Allocation	x	x	x	x	x
A31: Maldon Road, Birch	x	✓	x	✓	x
A47: Bradwell-Monk's Farm	x	x	x	x	x
A48: Bradwell - Grange Farm	x	x	x	✓	x
A49: Colemans	x	x	x	✓	x

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
Farm - Hill Broad Farm					
A50: Colemans Farm - Eastern extension (Appleford Farm)	x	x	x	✓	x
A51: Colemans Farm - North extension (Hill Broad Farm)	x	x	x	✓	x
A52: Colemans Farm - Southern extension	x	x	x	✓	x
A54: Whiteheads – Witham	x	x	x	x	x
A55: Sheepcotes Southern	x	x	x	x	x
A56: Sheepcotes Western	x	x	x	x	x
A57: Chalk End – Roxwell	x	x	x	x	x
A58: Little Smiths – Danbury	x	x	x	✓	x
A59: Lowleys Farm –	x	x	x	x	x

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
Chelmsford					
A60A: Shellow Cross Farm (A60) – Chelmsford	x	x	x	x	x
A60B: Shellow Cross Farm (A60) – Chelmsford	x	x	x	x	x
A61: Heckfordbridge	x	✓	x	✓	x
A62: Heckfordbridge	x	✓	x	✓	x
A63: Patch Park, Abridge	x	x	x	x	✓
A64: Land East of Asheldham Quarry	x	✓	x	✓	x
A65: Land South of Asheldham Quarry	x	✓	x	✓	x
A66: White House Farm - Woodham Walter (A44)	x	✓	x	✓	x
A67: Church Farm - Alresford (A16)	x	✓	✓	✓	✓

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
A68: Crabtree Farm - Great Bentley	x	✓	x	✓	x
A69: Frating Hall (A17)	x	✓	✓	✓	x
A71: Lodge Farm - Alresford	x	✓	✓	✓	✓
A72: Martells - Southern extension	x	x	x	✓	x
A73: Martells – Western extension	x	x	x	✓	x
A74: Thorrington Hall Farm (A21)	x	✓	✓	✓	✓
A75: Land at Orford, Ugley - Bollington Hall Ltd	x	x	x	x	x
A76: Elsenham (A25)	x	x	x	x	x
A77: Westward Extension to Highwood Quarry - Little Easton	x	x	x	x	x
A79: Crown Quarry - North	x	✓	x	✓	x

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
of Wick Lane					
A80: Crown Quarry - South of Wick Lane	x	x	x	x	x
A82: Colemans Farm - Elm Springs Extension	x	x	x	✓	x
A83: Colemans Farm - Hole Farm	x	x	x	✓	x
A84: Colemans Farm - Appleford Farm North Extension	x	x	x	✓	x
A85: Martells - North of Frating Road (East)	x	✓	x	x	x
A86: Martells - North of Frating Road (West)	x	x	x	x	x
A87: Martells - East of Slough Lane	x	✓	x	x	x
A88: Gurnhams Farm	x	✓	✓	✓	x
A89: Covenbrooke Hall Farm	x	x	x	x	x

Submitted Site	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality	Air Quality
A90: Rayne Quarry - Northern Extension	x	x	x	x	x
A91: Land at Chignal St James	x	x	x	x	x
A92: Land at Pattiswick Hall Farm - Small Site	x	x	x	x	x
A93: Land at Pattiswick Hall Farm - Full Site	x	x	x	x	x
A94: Land at Highfields Farm	x	x	x	✓	x
A95: Land at Bellhouse Farm South	x	x	x	✓	x
A96: Rayne Quarry - Southern Extension	x	x	x	x	x
D7: Land at Pond Farm (transhipment site)	x	x	x	✓	x

Review of RMLP Policies and Submitted Sites, and Policies and Sites To Be Carried Forward to Appropriate Assessment Stage from the RMLP alone

3.18. Policies and Submitted Sites have been considered above in the section entitled Assessing for any Significant Effects on a Habitats site from the Plan, and Tables 6 and 7 above summarise the screening decision for each policy and Submitted Sites respectively. Those policies and Submitted Sites shown as categories B or C in Tables 6 and 7 are screened in for further assessment as Likely Significant Effects cannot not be ruled out either alone, or cumulatively between different parts of the RMLP without taking mitigation into account.

3.19. The RMLP provides some protection for cumulative effects as it refers to the need to consider cumulative impacts on several occasions (supporting text of S10, S11 and DM1). Policy DM1 considers cumulative issues in the most detail, where Paragraph 5.46 refers to possible mitigation which "might include such measures as the phasing of extraction operations so that one site is completed before a second commences, a restriction on the number of HGV movements or the timetabling of such movements." In addition, paragraph 5.47 states that, "Where cumulative impacts have not been or are unable to be satisfactorily addressed through the application, the MPA could have grounds to refuse permission for that development"

3.1. DM1 is considered to be sufficient to control any residual water quantity issues arising from any unknown development. With respect to water quantity and quality, Policy DM1 requires that:

"Proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact, including cumulative impact with other developments, upon: …

3. The quality and quantity of water (including flood risk) within water courses, groundwater, surface water, and coastal areas,"

3.2. Tables 8 and 9 above summarise the policies and Submitted Sites which have been assessed as having the potential to cause a Likely Significant Effect on Habitats sites when considering the different potential impact pathways.

3.3. Table 10 below also lists the policies that have been assessed as having the potential to cause a Likely Significant Effect, alone or in combination, and the potential impact pathways, before taking mitigation into account (and therefore requiring Appropriate Assessment). The complete list of policies and Submitted Sites are set out within the Screening Table in Appendix 1.

3.4. Proposals which have the potential to adversely affect Habitats sites (Special Protection Areas, Special Areas of Conservation and Ramsar sites,) will require Appropriate Assessment in accordance with the Conservation of Habitats and

Species Regulations 2017 (as amended) before adoption of the RMLP and, at this stage mitigation can be considered.

3.5. Policies screened in for further assessment following application of Stage 1 are:

- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel Extraction
- P2: Preferred Site for Silica Sand Extraction

3.6. Submitted Sites screened in for further assessment following application of Stage 1 are:

- A31: Maldon Road, Birch
- A48: Bradwell - Grange Farm
- A49: Colemans Farm - Hill Broad Farm
- A50: Colemans Farm - Eastern extension (Appleford Farm)
- A51: Colemans Farm - North extension (Hill Broad Farm)
- A52: Colemans Farm - Southern extension
- A58: Little Smiths – Danbury
- A61: Heckfordbridge
- A62: Heckfordbridge
- A63: Patch Park, Abridge
- A64: Land East of Asheldham Quarry
- A65: Land South of Asheldham Quarry
- A66: White House Farm - Woodham Walter (A44)
- A67: Church Farm - Alresford (A16)
- A68: Crabtree Farm - Great Bentley
- A69: Frating Hall (A17)
- A71: Lodge Farm - Alresford (A19)
- A72: Martells - Southern extension
- A73: Martells – Western extension
- A74: Thorrington Hall Farm (A21)
- A79: Crown Quarry - North of Wick Lane
- A82: Colemans Farm - Elm Springs Extension
- A83: Colemans Farm - Hole Farm

- A84: Colemans Farm - Appleford Farm North Extension
- A85: Martells - North of Frating Road (East)
- A86: Martells - North of Frating Road (West)
- A87: Martells - East of Slough Lane
- A88: Gurnhams Farm
- A92: Land at Pattiswick Hall Farm - Small Site
- A93: Land at Pattiswick Hall Farm - Full Site
- A95: Land at Bellhouse Farm South
- D7: Land at Pond Farm (transhipment site)

3.7. Following the Regulation 18 consultation, representations will be taken into account and amendments will be made to update the Assessment of Candidate Sand and Gravel Sites report. The individual assessments of the candidate sites will be updated as necessary in light of the comments received. The re-graded assessment will then inform the selection of sites to be proposed for allocation within the Regulation 19 public consultation version of the MLP.

Effects of the Plan In Combination with other plans and projects

3.8. The underlying intention of the in-combination provision is to take account of cumulative effects in addition to the RMLP. This is in order to ensure that plans or projects which, individually, would not have significant effects alone, may combine with the effects of other plans and projects to result in significant effects. This ensures that any residual effects are properly assessed. Other plans and projects can be summarised as those that are consented but not implemented or are still in progress.

3.9. Only the effects of other plans or projects that could add cumulatively to the effects of the RMLP to cause an effect on a Habitats site should be included in addition to the RMLP.

3.10. The policies and Submitted Sites that have been screened out (Category A of the (Figure 4: Screening Criteria) do not require any further assessment because there are no effects at all, and therefore, there can be no residual effects to contribute to the in combination effects with other plans or projects.

3.11. Table 10 below lists the policies and Submitted Sites that have been assessed as having the potential to cause a Likely Significant Effect to all Habitats sites within scope, alone or in combination, and the potential impact pathways, before taking mitigation into account (and therefore requiring Appropriate Assessment).

3.12. The four policies which have been checked in Table 10 as having the potential for in combination effects (as well as alone) are:

- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel Extraction
- P2: Preferred Sites for Silica Sand Extraction

3.13. There are 31 Submitted Sites which have been checked in Table 9 as having the potential for in combination effects. The complete list of policies and Submitted Sites are set out within the Screening Tables in *Appendix 1: HRA Screening of Individual Policies* and *HRA Screening of Submitted Sites*.

~~3.14.~~ Any impact pathways that are not screeded for Likely Significant Effects *alone* should also be considered *in combination*. If there is the potential for LSE *in combination*, these pathways should also be considered at AA.

3.15. Once the RMLP has been re-screened at Regulation 19 any elements requiring an in combination assessment will be done so at AA.

Habitats Sites within Scope for Appropriate Assessment

3.16. The potential impact pathways between Habitats sites and RMLP identified at Screening Stage are shown in Table 10 below.

Table 10. Habitats Sites, Impact Pathways and LSE Identified at Screening Stage

Nature of potential impact	Which Habitats Site(s) could the Minerals Local Plan affect (alone or in combination with other plans and project)?	How the Minerals Local Plan (alone or in combination with other plans and projects) could affect a Habitats Site?	Likely to result in Significant Effect and therefore require further assessment? Either alone, or in combination
Impact to features (qualifying species) outside the protected site boundary	- Benfleet and Southend Marshes SPA and Ramsar site - Blackwater Estuary SPA and Ramsar site - Colne Estuary SPA and Ramsar site	Policies S12, P1 & P1. 18 Submitted Sites. Dust, noise & lighting affecting habitats and bird species during operations. Disturbance to Lapwing, Golden Plover, Brent Geese and Hen Harrier which utilise farmland and	Yes. Without mitigation to protect against this LSE cannot be ruled out as potential LSE. Need to progress to AA.

Nature of potential impact	Which Habitats Site(s) could the Minerals Local Plan affect (alone or in combination with other plans and project)?	How the Minerals Local Plan (alone or in combination with other plans and projects) could affect a Habitats Site?	Likely to result in Significant Effect and therefore require further assessment? Either alone, or in combination
	- Crouch and Roach Estuaries SPA and Ramsar site - Dengie SPA and Ramsar site - Foulness SPA and Ramsar site - Hamford Water SPA, SAC and Ramsar site - Stour and Orwell Estuaries SPA and Ramsar site - Thames Estuary and Marshes SPA and Ramsar site	grassland outside of designated sites. Lapwing and Golden Plover can travel considerable distances from the coast. Recreational disturbance from restoration e.g. through public access.	
Disturbance to habitats/ species (within a Habitats site) Recreational disturbance	- Abberton Reservoir SPA and Ramsar site - Benfleet and Southend Marshes SPA and Ramsar site - Blackwater Estuary SPA and Ramsar site - Colne Estuary SPA and Ramsar site - Crouch and Roach Estuaries SPA and Ramsar site	Policies S11, S12, P1, P2. 5 Submitted Sites. Dust, noise & lighting affecting habitats and bird species during operations. General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration, including use of putrescible waste. Plant machinery and lorry	Yes. Without mitigation to protect against this LSE cannot be ruled out as potential LSE. Need to progress to AA.

Nature of potential impact	Which Habitats Site(s) could the Minerals Local Plan affect (alone or in combination with other plans and project)?	How the Minerals Local Plan (alone or in combination with other plans and projects) could affect a Habitats Site?	Likely to result in Significant Effect and therefore require further assessment? Either alone, or in combination
	- Dengie SPA and Ramsar site - Essex Estuaries SAC - Foulness SPA and Ramsar site - Hamford Water SPA, SAC and Ramsar site - Stour and Orwell Estuaries SPA and Ramsar site - Thames Estuary and Marshes SPA and Ramsar site	transportation to and from quarries. Use of estuaries for transhipment. Recreational disturbance from restoration e.g. through public access. Restoration schemes are not yet known for all Submitted Sites. Impacts could be diverted & deflected through various measures.	
Water quality	- Abberton Reservoir SPA and Ramsar site - Benfleet and Southend Marshes SPA and Ramsar site - Blackwater Estuary SPA and Ramsar site - Colne Estuary SPA and Ramsar site - Crouch and Roach Estuaries SPA and Ramsar site - Dengie SPA and	Policies P1, P2. 27 Submitted Sites. Pollutants and silt into surface water / water courses from general quarrying activities, waste infill including use of putrescible waste. Plant machinery and lorry transportation to and from quarries (e.g. oil spills). Use of estuaries for transhipment.	Yes. Without mitigation to protect against this LSE cannot be ruled out as potential LSE. Need to progress to AA.

Nature of potential impact	Which Habitats Site(s) could the Minerals Local Plan affect (alone or in combination with other plans and project)?	How the Minerals Local Plan (alone or in combination with other plans and projects) could affect a Habitats Site?	Likely to result in Significant Effect and therefore require further assessment? Either alone, or in combination
	Ramsar site - Epping Forest SAC - Essex Estuaries SAC - Foulness SPA and Ramsar site - Hamford Water SPA, SAC and Ramsar site - Lee Valley SPA and Ramsar site - Stour and Orwell Estuaries SPA and Ramsar site - Thames Estuary and Marshes SPA and Ramsar	Via surface water, ground water. If reaches water courses, can be carried over relatively long distances (more than 20km has been considered as over precautionary).	
Water Quantity	- Epping Forest SAC - Lee Valley SPA and Ramsar site	Policies P1, P2. Changes to hydrology e.g. through minerals extraction.	Yes. Without mitigation to protect against this LSE cannot be ruled out as potential LSE. Need to progress to AA.
Air Quality	- Abberton Reservoir SPA and Ramsar site - Benfleet and Southend Marshes SPA and Ramsar site	Policies S11, S12, P1, P2. 4 Submitted Sites. General quarrying activities e.g., extraction and ancillary facilities, secondary	Yes, without sufficient data it is not possible to rule out LSE. Needs to progress to AA.

Nature of potential impact	Which Habitats Site(s) could the Minerals Local Plan affect (alone or in combination with other plans and project)?	How the Minerals Local Plan (alone or in combination with other plans and projects) could affect a Habitats Site?	Likely to result in Significant Effect and therefore require further assessment? Either alone, or in combination
	- Blackwater Estuary SPA and Ramsar site - Colne Estuary SPA and Ramsar site - Crouch and Roach Estuaries SPA and Ramsar site - Dengie SPA and Ramsar site - Epping Forest SAC - Essex Estuaries SAC - Foulness SPA and Ramsar site - Hamford Water SPA, SAC and Ramsar site - Lee Valley SPA and Ramsar site - Stour and Orwell Estuaries SPA and Ramsar site - Thames Estuary and Marshes SPA and Ramsar site	processing activities, transportation and some types of restoration, including use of putrescible waste. Plant machinery and lorry transportation to and from quarries. Lorries and other vehicles travelling to and from minerals sites, e.g. carrying minerals away from the quarry and waste to the site for restoration. Nitrogen deposition. Air pollution affecting vegetation during operations.	

4. HRA Screening Conclusion and Recommendations

4.16. This *Habitats Regulations Assessment Screening report for the Replacement Essex Minerals Local Plan 2025 to 2040 (Regulation 18 - Issues and Options),* February 2024 (by Place Services)- has reviewed the *draft Replacement Essex Minerals Local Plan 2025 to 2040* and the assessment of 52 Submitted Sites, prepared for Regulation 18 consultation. It enables Essex County Council to comply with Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (as amended).

4.17. The range of potential effects on 25 Habitats sites has been considered and assessed. In line with the Court judgement (CJEU People Over Wind v Coillte Teoranta C-323/17), unembedded mitigation measures cannot longer be taken into account when carrying out a HRA screening assessment to decide whether a plan or project is likely to result in Likely Significant Effects on a Habitats site.

4.18. Habitats sites for which there is the potential for Likely Significant Effect arising from the RMLP (without considering mitigation) are as follows:

- Abberton Reservoir SPA and Ramsar site
- Blackwater Estuary SPA and Ramsar site
- Benfleet and Southend Marshes SPA and Ramsar site
- Colne Estuary SPA and Ramsar site
- Crouch and Roach Estuaries SPA and Ramsar site
- Dengie SPA and Ramsar site
- Epping Forest SAC
- Essex Estuaries SAC
- Foulness SPA and Ramsar site
- Hamford Water SPA, SAC and Ramsar site
- Lee Valley SPA and Ramsar site
- Stour and Orwell Estuaries SPA and Ramsar site
- Thames Estuary and Marshes SPA and Ramsar site

4.19. There are four potential impact pathways to be taken forwards which are: impact to features (qualifying species) outside the protected site boundary; disturbance; water quality and air quality.

4.20. The following elements of the draft Replacement Essex Minerals Local Plan 2025 to 2040 have been screened in and may need to be taken to the next stage of the Habitats Regulations Assessment, i.e. Appropriate Assessment.

The four policies screened in for further assessment are:

- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred Sites for Sand and Gravel
- P2: Preferred Sites for Silica Sand Extraction

4.21. The RMLP now provides a general policy, i.e., DM1, which requires that there will be no adverse effect on the integrity of Habitats sites. This provides embedded mitigation for the RMLP, which should be read as a whole, and should avoid duplication because each policy needs to be considered for every planning application submitted. This is based upon inspectors' rulings for other local plans. Professional judgement has therefore been made that text stating the need to avoid adverse effects on integrity to Habitats sites is not needed to be repeated in every policy, providing that there is sufficient referencing and cross-referencing where deemed sufficiently important. As a result, several policies have been screened out that had previously been screened in. These include S5, S6, S8, S9, DM3 and DM4.

4.22. However, despite the embedded mitigation in DM1, Policies S11, S12, P1 and P2 require more consideration due to uncertainties and so may need to be brought to Appropriate Assessment for Regulation 19 of the RMLP.

4.23. Policy S11 *Access and Transportation* is screened in due to concerns relating to air quality impacts from traffic upon Habitats sites. The Predicted Environmental Concentration (PEC) of emissions resulting from the contribution of Policy S11 is unknown. The HRA in 2021 advised that detailed engagement with Natural England should be sought and further research was needed; this research is still required.

4.24. Epping Forest SAC in particular is in 'unfavourable' condition due to nitrogen deposition. While transport routes to and from any future minerals sites is not known, the Essex RMLP supports the London market and vehicles are therefore likely to be encouraged to use the M25 (in accordance with the RMLP's transport hierarchy), which passes adjacent to Epping Forest SAC. Furthermore, one of the Submitted Sites (A63: Patch Park, Abridge) is located 3.5km east of Epping Forest SAC.

4.25. Therefore, given the inability of the previous HRA 2021 to reach a conclusion on whether the RMLP 2021 could avoid any adverse effect on integrity, the need for additional research and liaison with Natural England, as well as current wider concerns surrounding air quality; specific concerns relating to the effects of air quality upon Epping Forest SAC, and the uncertainties due to the current lack of Preferred Sites, it would not be appropriate to screen out Policy 11 at this stage and we recommend that it is taken forward for further consideration at Appropriate Assessment, together with the air quality impact pathway.

4.26. Policy S12: *Mineral Site Restoration and After-Use* allows public access and recreation as an after use. Many Habitats sites in Essex (SPAs and Ramsar sites) have bird interest and / or associated habitats which have the potential to be adversely affected by increased recreational pressure.

4.27. The recommended text made by the HRA 2021 for S12 is now included. However, recreation as an after use has been screened in with respect to Submitted Sites as some are in close proximity to Habitats sites. Furthermore, recreation as an after-use cannot be screened out for any non-allocated sites which come forward during the life of the RMLP as their locations are as yet unknown.

4.28. Therefore, S12 should be taken forward in order to consider restoration by recreation once Preferred Sites are proposed at the next stage and more information may be available with respect to proposed restoration schemes.

4.29. P1: *Preferred Sites for Sand and Gravel Extraction* and P2: *Preferred Sites for Silica Sand Extraction* were automatically screened in due to the current lack of information about sites as there are no Preferred Sites at this stage. However, they will not be considered properly until more information is made available.

4.30. The 31 Submitted Sites screened in for further assessment are:

- A31: Maldon Road, Birch
- A48: Bradwell - Grange Farm
- A49: Colemans Farm - Hill Broad Farm
- A50: Colemans Farm - Eastern extension (Appleford Farm)
- A51: Colemans Farm - North extension (Hill Broad Farm)
- A52: Colemans Farm - Southern extension
- A58: Little Smiths – Danbury
- A61: Heckfordbridge
- A62: Heckfordbridge
- A63: Patch Park, Abridge
- A64: Land East of Asheldham Quarry
- A65: Land South of Asheldham Quarry
- A66: White House Farm - Woodham Walter (A44)
- A67: Church Farm - Alresford (A16)
- A68: Crabtree Farm - Great Bentley
- A69: Frating Hall (A17)
- A71: Lodge Farm - Alresford (A19)
- A72: Martells - Southern extension
- A73: Martells – Western extension

- A74: Thorrington Hall Farm (A21)
- A79: Crown Quarry - North of Wick Lane
- A82: Colemans Farm - Elm Springs Extension
- A83: Colemans Farm - Hole Farm
- A84: Colemans Farm - Appleford Farm North Extension
- A85: Martells - North of Frating Road (East)
- A86: Martells - North of Frating Road (West)
- A87: Martells - East of Slough Lane
- A88: Gurnhams Farm
- A92: Land at Pattiswick Hall Farm - Small Site
- A93: Land at Pattiswick Hall Farm - Full Site
- A95: Land at Bellhouse Farm South
- D7: Land at Pond Farm (transhipment site)

4.31. There are a number of Submitted Sites which are located relatively close to Habitats sites. The nearest sites are A67: Church Farm - Alresford (A16), A71: Lodge Farm - Alresford (A19) and A74: Thorrington Hall Farm (A21) which are all less than 500 metres from the Colne Estuary SPA and Ramsar site and Essex Estuaries SAC. These generally have the highest potential to result in LSE from several impact pathways.

4.32. Fifteen Submitted Sites have been included as having the potential to support qualifying bird species using land outside of the Habitats sites for which they are listed.

4.33. Three Submitted Sites have been considered to be close enough to have the potential to disturb qualifying features of the Colne Estuary SPA and Ramsar and Essex Estuaries SAC.

4.34. The issue of Air Quality is considered above with respect to Policy S11: *Access and Transportation*, which is screened in due to concerns relating to air quality impacts from traffic upon Habitats sites. Four Submitted Sites have been screened in, alone or in combination with other plans and projects. One Submitted Site is located within 200 metres of the Colne Estuary SPA and Ramsar and Essex Estuaries SAC, i.e. A71: Lodge Farm - Alresford (A19). Two more Sites are within 500 metres of these Habitats sites.

4.35. The fourth Submitted Site is situated 3.5 km from Epping Forest SAC, which is known to be particularly affected by air pollution i.e. A63: Patch Park, Abridge. Epping Forest SAC which is in ‘unfavourable’ condition due to nitrogen deposition. Site A63 should be considered in combination with other plans and projects at Appropriate Assessment.

4.36. The Water Quantity impact pathway has been screened out with respect to Submitted Sites because none are close enough to result in Likely Significant Effect arising from changes to the hydrology of the two Habitats sites scoped in with respect to Water Quantity, i.e. Epping Forest SAC and Lee Valley SPA and Ramsar site.

4.37. With respect to Water Quality, there are a number of Submitted Sites near to watercourses which feed into Salary Brook and the Roman River, both of which connect to the River Colne. Five Sites are close enough for there to be potential for LSE (alone) and have hydrological connectivity to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC.

4.38. In addition, two Sites are close enough to watercourses which feed into the Dengie SPA and Ramsar and Essex Estuaries SAC and two Sites are near to watercourses which feed into the Blackwater estuary. The water quality pathway is identified as needing to be taken forward to Appropriate Assessment.

4.39. Many other Submitted Sites have been assigned as being likely to result in non-significant impacts with other Submitted Sites and were then considered cumulatively due to their spatial distribution. Many are 10 -20 kilometres from the Colne Estuary SPA and Ramsar site or Blackwater SPA and Ramsar site and the Essex Estuaries SAC, so, while it is considered over precautionary to screen them in individually, they have been screened in for further assessment cumulatively, based on professional judgement. This includes eleven Submitted Sites situated within the River Blackwater valley and six Submitted Sites which connect to the Colne estuary.

4.40. These Submitted Sites should be carried forward to be considered if they are being proposed as Preferred Sites at the next stage of the RMLP. At AA, measures may need to be considered such as the need for appropriate phasing across Preferred Sites, as well as strict measures during operations.

4.41. There are 31 Submitted Sites which have been identified (in Table 9) as having the potential for in combination effects. The list of policies and Submitted Sites are set out within the Screening Tables 6 and 7 and in Appendix 1. Any elements requiring an in combination assessment will be undertaken during the Appropriate Assessment.

4.42. This HRA screening has therefore concluded that it is not possible to rule out the potential for Likely Significant Effects without further assessment.

4.43. As part of the ongoing iterative process, the next version of the RMLP will need to be re-screened before the Plan is finalised to enable it to take account of the conclusions of the HRA.

4.44. If the revised HRA concludes that it is not possible to rule out the potential for Likely Significant Effects of any element of the RMLP an Appropriate Assessment will be required under the Conservation of Habitats and Species Regulations 2017 (as amended) and changes to, or mitigation for, the policies and Sites may be required. It is anticipated that an Appropriate Assessment is likely to be required

once Preferred Sites are put forward; it is not currently required due to the level of uncertainty of the current version of the draft Replacement Essex Minerals Local Plan 2025 to 2040 (Regulation 18- Issues and Options), particularly the absence of Preferred Sites.

4.45. It is then envisaged that the RMLP will proceed to a Regulation 19 consultation, where the revised HRA will form part of the evidence base.

4.46. The final version of the Essex RMLP may only be adopted after having ascertained that it will not result in adverse effect on integrity of the Habitats sites within scope of this Assessment, alone or in combination with any other plans or projects.

Consulting Natural England

4.47. Natural England is the Statutory Nature Conservation Body and so must be formally consulted on the HRA and its comments must be taken into account.

4.48. In particular, it is recommended that the need for discussions surrounding air quality, particularly in relation to Access and Transportation (Policy S11) are highlighted.

5. References

Key sources for Habitats sites information:

- JNCC: **https://jncc.gov.uk/**
- Site Designation features and Conservation Objectives- Designated Sites View: **https://designatedsites.naturalengland.org.uk/**
- Site Improvement Plans: **https://publications.naturalengland.org.uk/category/4873023563759616**
- MAGIC (the Multi Agency Geographic Information for the Countryside website): **www.magic.gov.uk**
- "Managing Natura 2000 sites- The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC"
- Impact Risk Zones: https://data.gov.uk/dataset/5ae2af0c-1363-4d40-9d1a-e5a1381449f8/sssi-impact-risk-zones-england

Other references:

- Essex County Council Replacement Minerals Local Plan: Pre Submission Draft - Habitats Regulations Assessment, November 2012 (URS)
- Habitats Regulations Assessment For the Essex Minerals Local Plan Adopted July 2014 (as amended 2021), (Place Services, 2021)
- Essex and Southend-on-Sea Waste Local Plan 2017- Essex County Council and Southend-on-Sea Borough Council **https://www.essex.gov.uk/minerals-waste-planning-policy/waste-local-plan**
- The Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) **https://www.essex.gov.uk/minerals-waste-planning-policy/minerals-local-plan**
- The Habitats Regulations Assessment Handbook England and Wales (DTA Publications) **www.dtapublications.co.uk** (accessed under licence)
- Water Resources Management Plan by Anglian Water 2019 **https://www.anglianwater.co.uk/about-us/our-strategies-and-plans/water-resources-management-plan/**
- Essex Rivers Hub **http://essexrivershub.org.uk/**
- CIEEM (2021) Advisory Note: Ecological Assessment of Air Quality Impacts Version 2, October 2023 Chartered Institute of Ecology and Environmental Management. Winchester, UK. https://cieem.net/wp-content/uploads/2021/01/Air-Quality-advice-note-update-Oct-23.pdf
- National Highways: Standards for Highways: Design Manual for Roads and Bridges, LA 105 REV 0 Air Quality

https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

- National Atmospheric Emissions Inventory (**Download emission maps - NAEI, UK (beis.gov.uk)**
- Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations', Version: June 2018 **http://publications.naturalengland.org.uk/publication/4720542048845824**
- Natural England Commissioned Report NECR210. 'Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance.' **http://publications.naturalengland.org.uk/publication/5354697970941952**
- Predicting the effect of disturbance on coastal birds. RICHARD A. STILLMAN ANDREW D. WEST RICHARD W. G. CALDOW SARAH E. A. LE V. DIT DURELL First published: 05 March 2007 **https://doi.org/10.1111/j.1474-919X.2007.00649.x** IBIS International Journal of Science. **https://onlinelibrary.wiley.com/doi/full/10.1111/j.1474-919X.2007.00649.x**

Appendices

Appendix 1: Screening Determinations

Table 11: HRA Screening of Individual Policies

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
S1: Presumption in favour of sustainable development	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
S2: Strategic priorities for minerals development	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted. .

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
S3: Climate change	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
S4: Reducing the use of mineral resources	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
S5: Creating a Network of Aggregate Recycling Facilities and New Transhipment Sites	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. Embedded mitigation in DM1 sufficient. This is a change from assessment of 2021 HRA.
S6: Provision for sand and gravel	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE. Embedded mitigation in DM1

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
extraction														sufficient. This is a change from assessment of 2021 HRA.
S7: Provision for industrial minerals	x	x	x	x	x	x	x	x		x	x	x	x	Screen out. No LSE predicted.
S8: Safeguarding mineral resources and mineral reserves	x	x	x	x	x	x	x	x		x	x	x	x	Screen out. No LSE predicted. Embedded mitigation in DM1 sufficient. This is a change from assessment of 2021 HRA.

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
S9: Safeguarding mineral extraction sites and other Mineral Infrastructure	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. Embedded mitigation in DM1 sufficient. This is a change from assessment of 2021 HRA.
S10: Protecting and enhancing the environment and local amenity	x	x	x	x	x	x	x	x		x	x	x	x	Screen out. No LSE. This is a change from assessment of 2021 HRA.
S11: Access and Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Continue to screen in for further consideration at

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														AA due to the uncertainty surrounding air quality.
S12: Mineral Site Restoration and After-Use	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Continue to screen in for further consideration at AA, particularly to explore whether additional supporting text required relating to recreation is required.
P1: Preferred Sites for Sand and Gravel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Continue to Screen in as it is not currently

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Extraction														possible to screen out due to the uncertainty of the sites that will be included as Preferred Sites at Reg. 19 consultation.
P2: Preferred Site for Silica Sand Extraction	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Continue to Screen in as it is not currently possible to screen out due to the uncertainty of the sites that will be included as Preferred Sites at Reg. 19 consultation..

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
DM1: Development Management Criteria	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out as text included to protect Habitats sites. Mitigation is therefore embedded within RMLP. No LSE. This is a change from assessment of 2021 HRA.
DM2: Planning Conditions and Legal Agreements	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
DM3: Primary Processing Plant	x	x	x	x	x	x	x	x		x	x	x	x	Screen out. This is a change from assessment of

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														2021 HRA. Mitigation has now been embedded through DM1. Therefore, no LSE is predicted.
DM4: Secondary Processing Plant	x	x	x	x	x	x	x	x		x	x	x	x	Screened out. No LSE. Mitigation has now been embedded through DM1. This is a change from assessment of 2021 HRA.
IMR1: Implement-ation,	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.

RMLP Policy	Abberton Reservoir SPA / Ramsar	Blackwater Estuary SPA / Ramsar	Benfleet and Southend Marshes SPA / Ramsar	Colne Estuary SPA / Ramsar	Crouch & Roach Estuaries SPA / Ramsar	Dengie SPA / Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA/ Ramsar	Hamford Water SPA / SAC / Ramsar	Lee Valley SPA / Ramsar	Stour & Orwell Estuaries SPA / Ramsar	Thames Estuary & Marshes SPA / Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Monitoring and Review														

Table 12: HRA Screening of Submitted Sites

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
A6 - Bradwell Quarry	x	x	x	x	x	x	x	x	x	x	x	x	x	Allocated site (in 2014 RMLP) which hasn't come forward. Not within a minerals SSSI IRZ for a Habitats site. No Habitats sites within scope. Screen out. No LSE predicted.
A22 - Crumps Farm RMLP Allocation	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A23 - Crumps Farm RMLP	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Allocation														predicted.
A31 - Maldon Road, Birch	✓	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land.
A47 – Bradwell - Monk's Farm	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted
A48 - Bradwell - Grange Farm	x	✓	✓	x	x	x	x	x	✓	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A49 - Colemans Farm - Hill Broad Farm	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE,

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														cumulatively with other sites.
A50 - Colemans Farm - Eastern extension (Appleford Farm)	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A51 - Colemans Farm - North extension (Hill Broad Farm)	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites
A52 - Colemans Farm - Southern	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
extension														Water quality. Potential for LSE, cumulatively with other sites
A54 - Whiteheads – Witham	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A55 - Sheepcotes Southern	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A56 - Sheepcotes Western	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A57 - Chalk End	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
– Roxwell														predicted.
A58 - Little Smiths – Danbury	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality
A59 - Lowleys Farm – Chelmsford	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A60A - Shellow Cross Farm (A60) – Chelmsford	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A60B - Shellow Cross Farm (A60) –	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Chelmsford														
A61 - Heckfordbridge	✓	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A62 - Heckfordbridge	✓	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A63 - Patch Park, Abridge	x	x	x	x	x	x	✓	x	x	x	x	x	x	Screen in. Air Quality.
A64 - Land East of Asheldham	x	✓	x	x	✓	✓	x	✓	x	x	x	x	x	Screen in.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Quarry														Water quality and Functionally Linked Land
A65 - Land South of Asheldham Quarry	x	✓	x	x	✓	✓	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A66 - White House Farm - Woodham Walter (A44)	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A67 - Church Farm - Alresford (A16)	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality, Functionally Linked

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														Land, Air quality and Disturbance.
A68 - Crabtree Farm - Great Bentley	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A69 - Frating Hall (A17)	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality and Functionally Linked Land
A71 - Lodge Farm Alresford	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality, Functionally Linked Land, air quality and

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														Disturbance.
A72 - Martells - Southern extension	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A73 - Martells - Western extension	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A74 - Thorrington Hall Farm (A21)	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality, Functionally Linked

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														Land, air quality and Disturbance.
A75 - Land at Orford, Ugley - Bollington Hall Ltd	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A76 - Elsenham (A25)	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A77 - Westward Extension to Highwood Quarry - Little Easton	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A79 - Crown Quarry - North of	x	x	x	x	x	x	x	x	x	x	x	✓	x	Screen in. Functionally Linked

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
Wick Lane														Land
A80 - Crown Quarry - South of Wick Lane	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A82 - Colemans Farm - Elm Springs Extension	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A83 - Colemans Farm - Hole Farm	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
														other sites.
A84 - Colemans Farm - Appleford Farm North Extension	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A85 - Martells - North of Frating Road (East)	x	x	x	x	x	x	x	x	x	x	x	✓	x	Screen in. Functionally Linked Land.
A86 - Martells - North of Frating Road (West)	x	x	x	x	x	x	x	x	x	x	x	✓	x	Screen in. Functionally Linked Land

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
A87 - Martells - East of Slough Lane	x	x	x	x	x	x	x	x	x	x	x	✓	x	Screen in. Functionally Linked Land
A88 - Gurnhams Farm	x	x	x	x	x	x	x	x	x	✓	x	x	x	Screen in. Functionally Linked Land
A89 - Covenbrooke Hall Farm	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted
A90 - Rayne Quarry - Northern Extension	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
A91 - Land at Chignal St James	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
A92 - Land at Pattiswick Hall Farm - Small Site	x	x ✓		x	x	x	x	✓	x	x	x	x	x	Screen in. . Water quality. Potential for LSE, cumulatively with other sites
A93 - Land at Pattiswick Hall Farm - Full Site	x	x ✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. . Water quality. Potential for LSE, cumulatively with other sites.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
A94 - Land at Highfields Farm	x	x ✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites.
A95 - Land at Bellhouse Farm South	x	x	x	✓	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites
A96 - Rayne Quarry - Southern Extension	x	x	x	x	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.

Site Code & Name	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Benfleet& Southend Marshes SPA & Ramsar	Colne Estuary SPA and Ramsar	Crouch and Roach Estuaries SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Foulness SPA and Ramsar	Hamford Water SPA, SAC & Ramsar	Lee Valley SPA and Ramsar	Stour &Orwell Estuaries SPA & Ramsar	Thames Estuary and Marshes SPA and Ramsar	Will Site have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
D7 - Land at Pond Farm (transhipment site)	x	✓	x	x	x	x	x	✓	x	x	x	x	x	Screen in. Water quality. Potential for LSE, cumulatively with other sites

Appendix 2: Main sources and effects of air pollutants on Habitat Sites

Pollutants	Source	Effects on habitats and species
Acid Deposition	SO_2, NO_x and ammonia all contribute to acid deposition. Although future trends in sulphur emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, it is likely that increased nitrogen emissions may cancel out any gains produced by reduced sulphur levels	Can affect habitats and species from acid rain, as well as, dry deposition. Some habitats will be more susceptible depending on soil type, geology, weathering rate and buffering capacity.
Ammonia (NH_3)	Ammonia is released following decomposition and volition of animal wastes. It is naturally occurring trace gas, but levels have increased considerably within increased agricultural practices. Ammonia reacts with acid pollutants such as the products of SO_2 and NO_x emissions to produce fine ammonium (NH_4) containing aerosol which may be transferred much longer distances (Can therefore be a significant trans-boundary issue).	Adverse effects are as a result of nitrogen deposition leading to eutrophication. As emissions mostly occur at ground level in the rural environment and NH_3 is rapidly deposited, some of the most acute problems of NH_3 are for small relict nature reserves located near to intensive agricultural landscapes.
Nitrogen oxides (NO_x)	Nitrogen oxides are mostly primarily produced in combustion processes, such as coal fire power stations.	Deposition of nitrogen compounds (Nitrates, nitrogen dioxide and nitrate acid), can lead to both soil and freshwater acidification. In addition, nitrogen compounds can cause eutrophication of soils and water. This alters the species composition of plant communities and can

Pollutants	Source	Effects on habitats and species
		eliminate sensitive species.
Nitrogen deposition (N)	The pollutants that contribute to nitrogen deposition are derived mainly from NO_x and NH_3 emissions. These pollutants cause acidification (see also acid deposition) as well as eutrophication.	Species-rich plant communities with relatively high proportions of slow growing perennial species and bryophytes are most at risk from Nitrogen eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N. N disposition can also increase the risk of damage from abiotic factors e.g. drought and frost.
Ozone (O_3)	A secondary pollutant generated by photochemical reactions from NO_x and volatile organic compounds. These are mainly released by the combustion of fossil fuels in the UK has led to a large increase in background ozone concentration, leading to an increased number of days when levels across the region are above 40ppb. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O_3 above 40 ppb can be toxic to humans and wildlife, and can affect buildings. Increased ozone concentrations may lead to a reduction in growth of agricultural crops decreased forest production and altered species composition in semi-natural plant communities.
Sulphur Dioxide SO_2	Main sources of Sulphur Dioxide emission are electricity generation, industry and domestic fuel combustion. May also arise from shipping and increased atmospheric concentrations in busy ports. Total sulphur dioxide emissions have decreased substantially in the UK since	Wet and dry depositions of Sulphur Dioxide acidifies soils and freshwater, and alters the species composition of plant and associated animal communities. The significance of impacts depends on levels of deposition and the buffering

Pollutants	Source	Effects on habitats and species
	the 1980's.	capacity of soils.

Appendix 3: List Of Habitats Sites, Conservation Objectives and Vulnerabilities

Please refer to separate attachment to due the large size of this section.

Essex County Council