

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



Executive Summary

A Habitats Regulations Assessment (HRA) has been prepared by Place Services for the emerging Regulation 18 Essex Minerals Local Plan July 2014 (as amended in 2021), to enable Essex County Council to comply with Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (as amended). This updates the Habitats Regulations Assessment prepared by URS -entitled *Essex County Council Replacement Minerals Local Plan: Pre Submission Draft -Habitats Regulations Assessment, November 2012*. It should be read in conjunction with this HRA, provided for 2021.

It is not currently possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites from the Plan alone. There is one issue remaining which is in relation to air quality and Policy S11: Access and Transportation. This HRA has been able to eliminate all other elements of the MLP 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 needs further advice from Natural England to support an assessment of effects.

The Essex Minerals Local Plan (MLP) requires a review every five years and this is the first such review of this Plan.

There were several potential Likely Significant Effects identified on Habitats Sites (formerly known as European sites or Natura 2000 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. This was largely because further consideration and possible mitigation was required, which cannot be considered until an appropriate assessment is undertaken (Stage 2). The policies and Preferred Sites screened in for further assessment 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 transshipment 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

There were a number of potential impacts upon Habitats Sites which could arise as a result of components of the Minerals Local Plan. At screening stage (Chapter 3), the Habitats Sites predicted to have Likely Significant Effect arising from the MLP (without considering mitigation) were:

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

Thus, the HRA proceeded to the second stage -Appropriate Assessment -where it has considered the elements of the MLP which required further assessment of their potential to result in adverse effects on the integrity of one of more Habitats Site, either alone or in combination with other plans or projects.

The above policies and Preferred Sites were considered against the following potential impact pathways at Appropriate Assessment, which were considered most likely to have potential to cause an adverse effect on the integrity of a Habitats Site:

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

The Appropriate Assessment has recommended a number of amendments to the emerging Minerals Local Plan, including some amendments to policies and/or their supporting text.

There is a summary table (Table 14) which sums up the HRA's recommendations and assessment with respect to the ability of each policy to avoid adverse effects on the integrity of Habitats Sites, either alone or in combination with other plans and projects. This table can be found in the *Recommendations* section of the Appropriate Assessment. Text amendments to strengthen supporting text and/ or policies have been recommended for the following elements:

- S5: Creating a network of aggregate recycling facilities
- S9: Safeguarding mineral transshipment 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

The MLP advises that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. No locations have been provided for new sites. While the Policy sets out parameters for when new sites might be acceptable, specific sites are not identified and so it is not possible to fully to assess whether there could

be any adverse effects on integrity. Therefore, it is recommended that additional clarification should be included within the supporting text for Policy S5.

Policy S9: Safeguarding mineral transshipment sites and secondary processing facilities

Disturbance and water quality were considered with regard to transshipment sites, particularly the safeguarded land at Parkeston Quay at Harwich Port, which is adjacent to the Stour and Orwell SPA and Ramsar site. If the Parkeston Quay transshipment 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 will need to be considered in a project-level HRA.

Policy S12: Mineral Site Restoration and After-Use

A key recommendation of the 2012 HRA 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. This HRA continues to support this recommendation and recommends that restoration proposals for sites situated within an Impact Risk Zone¹ 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.

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 MLP should not cause an adverse effect on integrity. The HRA recommends that the policy text is slightly updated for this purpose.

Policy DM1: Development Management Criteria

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

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

¹ 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/ssi-impact-risk-zones-england>

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

Preferred Sites

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 is sufficient for other policies to protect B1, it is recommended that additional specific advice is provided for A31 as the watercourse runs through the centre of it. and so careful consideration, planning, design and phasing will be required in order to ensure that water quality will not be affected downstream, and thereby avoid adverse effects on the integrity of any Habitats Site.

Policy S11: Access and Transportation

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

Notwithstanding the above concerns with Policy S11 and air quality, the measures recommended in this HRA are considered sufficient to ensure that all the other elements of the MLP screened in during HRA Stage 1 will also avoid all other adverse effects on site integrity either alone or in combination with other plans or projects.

The recommendations to amend or add text to the above policies do not exclude the need for project-level HRA but enables a conclusion of no adverse effects on integrity at the Plan level, because the identified risks to Habitats Sites have been 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.

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Glossary

AA	Appropriate Assessment
AEOI	Adverse Effect on Integrity (of Habitats Sites)
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
MLP	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
ZOI	Zone of Influence

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 emerging Regulation 18 Essex Minerals Local Plan (July 2014, as amended 2021) in accordance with Article 6(3) and (4) of the EU Habitats Directive and with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).
- 1.2. The HRA has included consideration of the responses made by stakeholders as part of the Council's Duty to Cooperate.
- 1.3. This document will form part of the supporting evidence for the Essex Minerals Local Plan and Natural England will be consulted upon it during the 'Regulation 18' public consultation in March 2021 and any subsequent consultations.
- 1.4. The Habitats Regulations Assessment can be amended iteratively as part of the process of finalising the updated Essex Minerals Local Plan review.

Background to Habitats Regulations Assessments

- 1.5. 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).
- 1.6. 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 being affected 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.

- 1.7. 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 Handbook².
- 1.8. 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 Site³ as defined in the National Planning Policy Framework (NPPF, 2019).
- 1.9. 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)⁴ for a number of Habitats Sites, it is not possible to rule out Likely Significant Effects, without mitigation in place.
- 1.10. 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.

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.

² The DTA Publications Handbook can be found at www.dtapublications.co.uk

³ 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 176 of the NPPF (2019). 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.

⁴ 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/ssi-impact-risk-zones-england>

- 1.11. This HRA report therefore provides (plan level) Stage 1 HRA Screening and Stage 2 Appropriate Assessment as required by Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (as amended).
- 1.12. 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.
- 1.13. 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.
- 1.14. The HRA should be undertaken by the 'competent authority' and Place Services has been commissioned to complete this on behalf of Essex County Council.
- 1.15. 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

- 1.16. The HRA also requires close working with Natural England as the statutory nature conservation body.
- 1.17. 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.
- 1.18. URS prepared the Minerals Local Plan HRA 2012 on behalf of Essex County Council, and, at the time, sought Natural England's views on the proposed methodology for the HRA. Natural England welcomed the proposed approach and generally agreed that it accords with the requirements of the Habitats Regulations.
- 1.19. This updated HRA document will also be consulted upon with Natural England.
- 1.20. In advance of seeing this document, Natural England has 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."

The Minerals Local Plan

- 1.21. The Essex Minerals Local Plan 2014 is currently being reviewed. Reviewing a Minerals Local Plan is required under the National Planning Policy Framework (NPPF 2019). 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. The plan-period covers 18 years between the 1 Jan 2012 – 31 Dec 2029 inclusive.
- 1.22. The emerging Essex Minerals Local Plan 2014 as amended 2021 (hereon in referred to as the MLP) comprises an important part of the 'Development Plan' in Essex, for it sets out how Essex County Council will provide for our 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.
- 1.23. Stakeholders have been consulted on the MLP as part of the Duty to Cooperate.
- 1.24. Regular discussions have been held between the authors of the MLP and this document.
- 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 Local Plan consists of 12 strategic policies; two preferred site policies; four development management policies and one monitoring policy.
- 1.27. The character of the County, policy and guidance, the evidence base and consultation feedback has resulted in the Spatial Vision. This provides a picture of how mineral and mineral related development will be provided in the County during the period up to 2029. The nine strategic priorities to achieve this aim are set out in Policy S2. The Vision is broken down into eight aims comprised of fourteen Strategic Objectives.
- 1.28. Paragraph numbers referred to in this HRA are the original numbers from the 2014 version of the Minerals Local Plan.
- 1.29. A Habitats Regulations Assessment prepared by URS - entitled *Essex County Council Replacement Minerals Local Plan: Pre Submission Draft -Habitats Regulations Assessment, November 2012*, - was undertaken for the Essex Minerals Local Plan 2014. It should be read in conjunction with this HRA for 2021.

Minerals Activities and Associated Effects

- 1.30. 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.
- 1.31. 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).
- 1.32. 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.
- 1.33. 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.
- 1.34. 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.
- 1.35. Noise and light pollution from extraction, ancillary facilities, transportation, and some types of restoration may impact upon fauna such as bats and birds.
- 1.36. Wetland habitats are particularly vulnerable to pollution from surface or ground water sources.
- 1.37. 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.
- 1.38. 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.
- 1.39. 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

- 1.40. Habitats Sites is the term used in the NPPF (2019) to describe 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 Europe's most valuable and threatened species and Habitats.

- 1.41. 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. The following 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.
- 1.42. The following table (Table 1: Description and Explanation of SPAs, SACs and Ramsar sites) offers a description and explanation of SPAs, SACs and Ramsar sites.

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

<p>Special Protection Area (SPA)</p> <p>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. <i>Legislation: The Conservation of Habitats and Species Regulations 2017 (as amended).</i></p>
<p>Special Area of Conservation (SAC)</p> <p>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. <i>Legislation: The Conservation of Habitats and Species Regulations 2017 (as amended).</i></p>
<p>Ramsar sites (Wetlands of International Importance)</p> <p>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. <i>Legislation: Ramsar Convention (1971) – Wetlands of International Importance.</i></p>

2. Methodology

Habitats Regulation 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 two sequential stages, i.e. screening and appropriate assessment. The four stages are outlined here and Stage 1 and 2 are 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 the Essex Minerals Local Plan (July 2014, as amended 2021) 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 significant adverse effects, 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. The process undertaken for the Appropriate Assessment is set out in Chapter 4 of this report.
- 2.8. Some policies of the Minerals Local 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.
- 2.9. 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 sites' Conservation Objectives. The assessment must consider the implications for each qualifying feature of each potentially affected Habitats Site.
- 2.10. If effects remain after all alternatives and mitigation measures have been considered, the HRA proceeds to Stage 3.

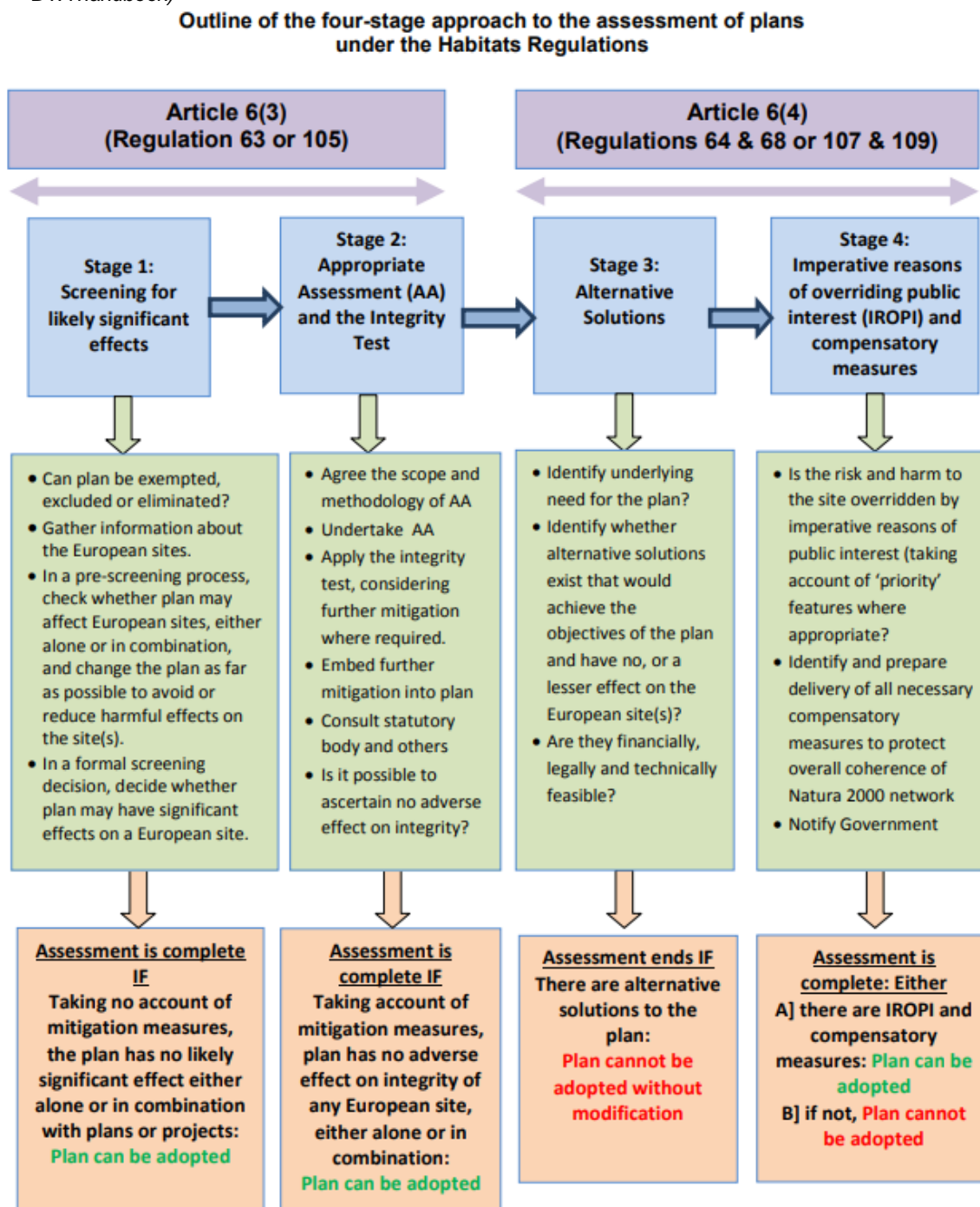
Stage 3 - Assessment of Alternative Solutions

- 2.11. 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

- 2.12. Stage 4 involves the process of identifying 'imperative reasons of overriding public interest'. 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)



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Table 2: Stages of the Habitats Regulations Assessment Process

Stage	Tasks	Outcome
Stage 1 HRA Screening (Regulation 63)	<ul style="list-style-type: none"> • List the policies and allocations. • 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. 	<ul style="list-style-type: none"> • 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. <p><i>People over Wind CJEU ruling (April 2018) means that it is not possible to consider mitigation measures when screening for impacts.</i></p>
Stage 2 Appropriate Assessment (Regulation 63)	<ul style="list-style-type: none"> • 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 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 	<ul style="list-style-type: none"> • 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. <p><i>Holohan CJEU ruling (November 2018) now imposes more detailed requirements on the competent authority at Appropriate Assessment stage.</i></p>

Stage	Tasks	Outcome
	Habitats Sites, in view of the Site's conservation objectives, consider mitigation measures. <ul style="list-style-type: none"> Formerly Consult Natural England. 	
Stage 3 Assessment of alternative solutions (Regulation 64)	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> If there are alternative solutions to the Local Plan, it cannot be adopted without modification. If no financially, legally or technically viable alternatives exist, go to Stage 4.
Stage 4 IROPI (Regulation 64)	<ul style="list-style-type: none"> 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 Natura 2000 network and notify Government. 	<ul style="list-style-type: none"> 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

2.13. A summary of the screening process is set out in Figure 2 below.

2.14. The screening stage of an HRA identifies whether the Local Plan 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 Local Plan 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.

2.15. The Minerals Local Plan requires an HRA for the following reasons:

Can the plan be exempt?

No, the MLP is not directly connected with or necessary for the management of any Habitats Sites.

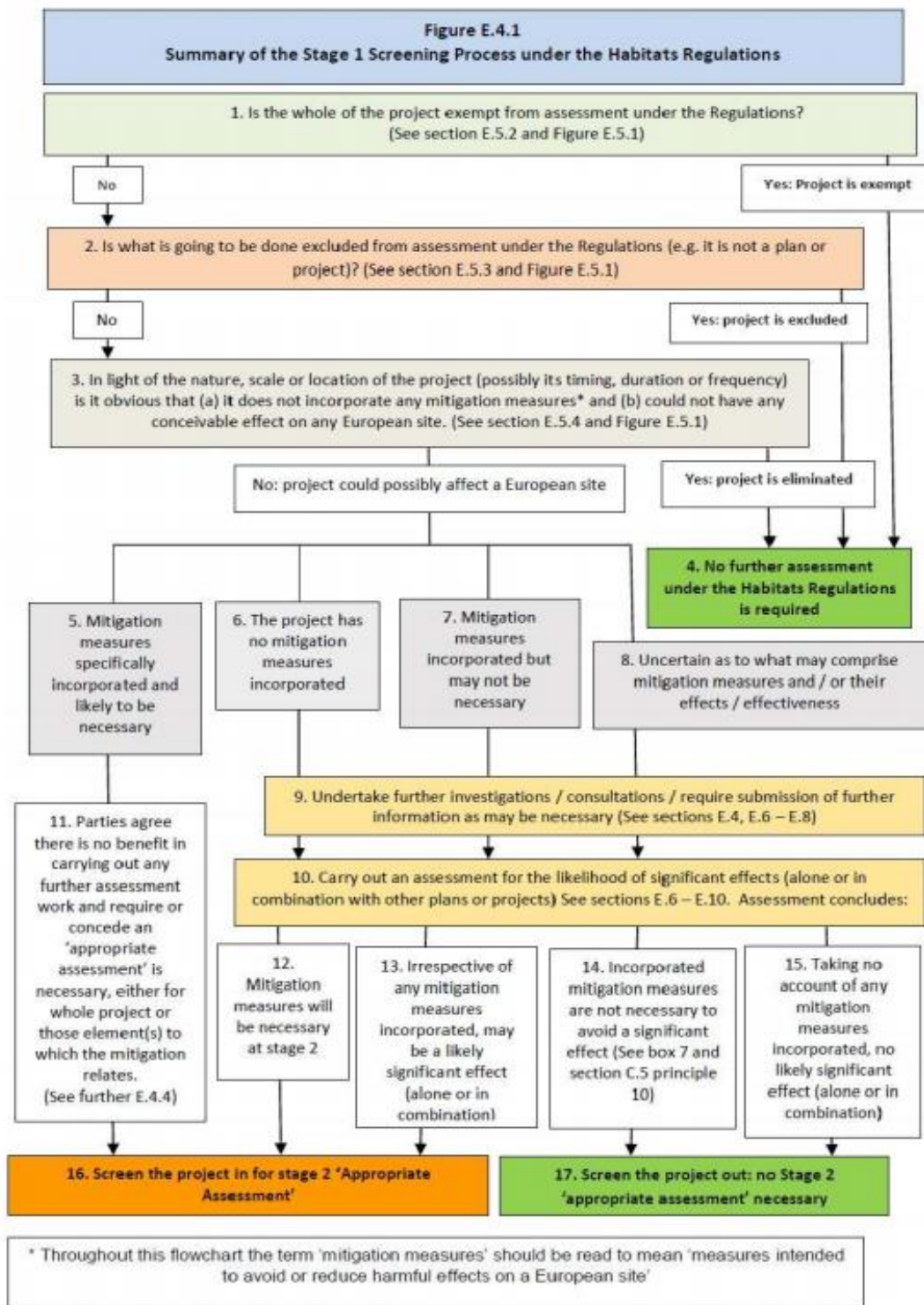
Can the plan be excluded?

No, the MLP cannot be excluded as it falls within the definition of being a plan within the Habitats Regulations.

Can the plan be eliminated?

No, the MLP as a whole cannot be eliminated as it proposes a number of policies which may have a Likely Significant Effect on one or more Habitats Sites. However, individual policies can be eliminated.

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



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- 2.16. 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’.
- 2.17. ‘*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.
- 2.18. An effect which is not significant can be described as ‘*insignificant*’, ‘*de minimis*’ or ‘*trivial*’- i.e. it would not undermine the conservation objectives.
- 2.19. 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 Minerals Local Plan would not have a significant effect on the integrity of a Habitats Site.
- 2.20. Key guidance and background information has come from the following sources:
- DTA Publications Handbook: <https://www.dtapublications.co.uk/> (under subscription);
 - *Essex County Council Replacement Minerals Local Plan: Pre Submission Draft - 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. Habitat 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.

Allocations in the Emerging Essex Minerals Local Plan

- 2.21. The amendments made to the emerging Essex Minerals Local Plan 2021 (hereafter referred to as the ‘MLP’) have been assessed as to whether the changes to these proposals may create the potential to cause any adverse effects to Habitats Sites.
- 2.22. In addition, the MLP has been checked to ensure that it is up-to-date with respect to current relevant legislation, national policy, guidance and case law. Examples are:
- Updates to Habitats/ European/ 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 has now been proposed as an SAC, but has been designated as an SPA and Ramsar since 1993.

- Relevant updates to HRA case law. E.g. whether an appropriate assessment is now required, when it might not have been in 2012 (e.g. due to the 'People Over Wind' ruling⁵).

2.23. Since the MLP was approved in 2014, many of the Preferred Sites have already been granted planning permission or are in the process of doing so. Indeed, some have started operating. Table 3 below lists all of the Preferred Sites and Reserve Sites listed in the 2014 MLP and sets out the progress against each of these. This information is derived from Table 5 of the amended MLP (2021).

2.24. Any Preferred Site which now has planning permission has been scoped out of this HRA as the decision has already been made and a project-level HRA should have been undertaken, where appropriate. The two most right-hand columns of Table 3 below state whether or not the Preferred and Reserve Sites now have planning permission and are therefore scoped out from any further assessment in this HRA.

Table 3: Scoping of Preferred and Reserve Sites

Site No.	Location	Mineral Site Details (from MPA, Table 5)	Has planning permission been granted?	Scoped in?
A3	Bradwell Quarry, Rivenhall	Extension to existing quarry. Working and restoration to be integrated with A4-A7	Yes, planning permission already granted. Works ongoing.	No
A4	Bradwell Quarry, Rivenhall	Extension to existing quarry. Working and restoration to be integrated with A3 & A5- A7	Yes, planning permission already granted. Works ongoing.	No
A5	Bradwell Quarry, Rivenhall	Extension to existing quarry. Working and restoration to be integrated with A3-A4/ A6-A7	Yes, planning permission already granted. Preparation works have started.	No
A6	Bradwell Quarry, Rivenhall	Extension to existing quarry. Working and restoration to be integrated with A3-A5 / A7. Was a reserve site in MLP 2014. Now proposed to be a Preferred site (MLP update 2021)	No	Yes

⁵ Case C 323/17 People Over Wind 12th April 2018 (case in the European Courts)

Site No.	Location	Mineral Site Details (from MPA, Table 5)	Has planning permission been granted?	Scoped in?
A7	Bradwell Quarry, Rivenhall	Extension to existing quarry. Working and restoration to be integrated with A3-A6. Was a reserve site in MLP 2014. Now proposed to be a Preferred site (MLP update 2021)	No. Approved by Planning Committee but permission has not been finalised.	Yes
A9	Broadfield Farm, Rayne	New Preferred Site.	Yes. Granted but not active.	No
A13	Colchester Quarry, Fiveways	Extension to existing quarry	Yes	No
A 20	Sunnymead, Alresford	Extension to existing quarry	No. Approved by Planning Committee but permission has not been finalised.	Yes
A22	Little Bullocks Farm, Little Canfield	Extension to existing quarry	No	Yes
A23	Little Bullocks Farm, Little Canfield	Extension to existing quarry	No	Yes
A31	Maldon Road, Birch	Extension to existing quarry	No	Yes
A38	Blackley Quarry, Gt Leighs	Extension to existing quarry	Yes	No
A39	Blackley Quarry, Gt Leighs	Extension to existing quarry	Yes	No
A40	Shellows Cross, Roxwell / Willingale	New site	No	Yes

Site No.	Location	Mineral Site Details (from MPA, Table 5)	Has planning permission been granted?	Scoped in?
A46	Colemans Farm	New site	Yes. Possible amendments due to A12 widening	No
B1	Slough Farm, Ardleigh	Extension to existing quarry	No	Yes

- 2.25. All parts of the MLP, except Preferred Sites, have been listed in Table 8 where they have been scoped or screened as appropriate. Table 9 is the screening table for Preferred Sites.
- 2.26. In addition, elements of the MLP that cannot possibly have any effect on site have been screened out, e.g. introductory text or timing of the plan.
- 2.27. 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.
- 2.28. The following figure provides a useful checklist of issues that could potentially be affected by a plan. The appropriate elements of this list have been used in the HRA Report.

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

Scanning and site selection list 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 <u>sea bed</u> , 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 <u>the species</u> 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 <u>servicing the</u> 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 <u>rely on</u> 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 <u>are considered to be</u> 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 <u>are considered to be</u> 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 <u>are considered to be</u> potentially sensitive to the source of new or increased mortality that could be brought about by the plan	
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Identifying Habitats Sites, their Conservation Objectives and Qualifying Features

2.29. The qualifying features and conservation objectives of the Habitats Sites, together with current pressures and potential threats, has 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.

2.30. Key sources of the Habitats Sites information were found at:

- JNCC: <http://jncc.defra.gov.uk/>
- Site Designation features and Conservation Objectives- Designated Sites View: <https://designatedsites.naturalengland.org.uk/>
- Site Improvement Plans, e.g.: <http://publications.naturalengland.org.uk/publication/6270737467834368>
- 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"http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_.nov_2018_endocx.pdf

2.31. It is noted in paragraph 3.105 of the MLP that "*other proposals for sand and gravel extraction at locations situated outside of the areas identified for future working will normally be resisted by the Mineral Planning Authority (MPA) unless there is an 'over-riding justification' and/ or 'over-riding benefit' as set out in Policy S6*". Examples include agricultural irrigation reservoirs, borrow pits (e.g. for a road scheme) or Prior extraction to prevent mineral sterilisation where a significant development is taking place. Such sites coming forward off-plan are known as 'windfall sites'.

2.32. The MLP 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 likely to be affected by impacts relating to the MLP; 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 4 below.

Table 4: Habitats Sites Within Scope of Assessment

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
Orfordness and Shingle Street SAC	Suffolk
Devils Dyke SAC	Cambridgeshire, Suffolk

Site	Location
Wormley-Hoddesdon Park Woods SAC	Hertfordshire
Epping Forest SAC	Essex
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, Kent
Dengie SPA and Ramsar	Essex
Benfleet and Southend Marshes SPA and Ramsar	Essex
Stour and Orwell 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
Abberton Reservoir SPA and Ramsar	Essex
Lee Valley SPA and Ramsar	Essex, Greater London, Hertfordshire

2.33. 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 a Habitats Site from the Minerals Local Plan and Use of Impact Pathways

2.34. 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.

2.35. 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, we move straight to Appropriate Assessment stage.

2.36. 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.

2.37. 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).

2.38. A table of all the designated sites screened in showing all identified potential impact pathways is provided in Appendix 1. This has been used to assist in identifying potential Likely Significant Effects.

2.39. 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'.

2.40. The Zones of Influence 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. 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. 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 Minerals Local Plan, as described below.

2.41. Whilst this HRA takes a similar approach to that set out within Table 4 (*Screening Distances Used for Each Source of Impact*) of the 2012 HRA, the distances set out in that table have not been strictly adhered to for the reasons set out above.

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

Land Take

2.43. Direct or indirect impacts to a Habitats Site could cause habitat loss, degradation or fragmentation.

2.44. 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 is designated.

2.45. 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

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

Impacts on protected species outside the designated site

2.47. Functionally linked land is land situated outside the Habitats Site which supports designated features of Habitats Sites. The impact on Habitats 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.

2.48. 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. Natural England has 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.

Habitat/species disturbance

2.49. 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.

2.50. *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.”

2.51. 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.

2.52. 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.

2.53. 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. Most have bird interest and / or associated habitats which have the potential to be adversely affected by increased recreational pressure.

2.54. Disturbance- including loss of functionally linked land and 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

2.55. 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.

- 2.56. 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.
- 2.57. 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).
- 2.58. 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.
- 2.59. 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.
- 2.60. Backfilling quarry void space with overburden or imported fill may cause changes to groundwater levels, quality, and flow paths in adjoining areas.
- 2.61. 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.
- 2.62. Some of the Habitats Sites scoped in 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.
- 2.63. 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 between a Habitats Site with water quality or quantity ‘sensitivities’ and Preferred Site.
- 2.64. A map showing the juxtaposition of designated Main Rivers (Environment Agency control) with the Habitats Sites within scope and Minerals sites - and therefore creating a potential pollution pathway- can be found in Chapter 3 (Habitats Sites, Main River Locations and Preferred Sites).
- 2.65. The quality 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 potential impacts are therefore within scope of this HRA screening for the above Habitats Sites.

Air Quality

- 2.66. 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.

- 2.67. 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. The primary contributor to atmospheric pollution is transport related activities. Therefore, the main pollutants to atmospheric pollution are considered to be oxides of nitrogen (NO_x) or sulphur dioxide (SO₂) from traffic emissions. However, high intensities of agricultural practices are also considered to have a significant impact to air pollution.
- 2.68. A distance of 200m has been used for considering likely significant effects from potential air pollution. This is taken from the Highways Agency Design Manual for Road and Bridges (DMRB)⁶ 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.
- 2.69. A map showing the location of roads, Habitats Sites within scope and Preferred Sites can be found below in Chapter 3.
- 2.70. 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 report by URS (November 2012)

- 2.71. The HRA 2012 screened out all Preferred Sites and policies as being unlikely to lead to a Likely Significant Effect. However, it should be borne in mind that this report preceded the 'People Over Wind' court judgement, and it could therefore take mitigation into account at screening stage.
- 2.72. In order to conclude Likely Significant Effect, the 2012 HRA made two recommendations relating to air quality and to putrescible waste at two Preferred Sites. It considered them with respect to policies S11 and S12 respectively, but not in relation to the Preferred Sites policy (P1). However, the details are summarised here as it is relevant to some Preferred Sites. The conclusions are set out below.
- 2.73. The first recommendation of the URS 2012 HRA related to Policy S11: Access and Transport. *"The minerals authority should require any proposals for new minerals sites or expanded operations at existing minerals sites to comply with the Department for Transport Design Manual for Roads and Bridges (DMRB) with regard to the criteria that will trigger a specific transport/air quality assessment. The DMRB recommends that any project which is likely to result in an increase of Heavy Duty Vehicle movements within 200m of a designated site of more than 200 per day should undertake specific air quality analysis. This air quality analysis should comply with Environment Agency guidance and determine whether there will be an increase in pollutant concentrations, nitrogen deposition or acid deposition equivalent to more than 1% of the Critical Load/Level for that designated site, and if so, whether the Predicted Environmental Concentration (PEC) will be equivalent to more than 70% of the Critical*

⁶ Design Manual for Roads and Bridges (DMRB) (2018)
<http://www.standardsforhighways.co.uk/ha/standards/dmrb/>

Level/Critical Load. If both those thresholds are exceeded a more detailed ecological analysis should be carried out to demonstrate that an adverse effect on the integrity of the designated site will nonetheless not result, before planning permission is granted.”

- 2.74. The second recommendation related to restricting the waste streams for restoration of two specific quarries due to their proximity to Habitats Sites, i.e. A31 Maldon Road, Birch near to Abberton Reservoir SPA and Ramsar site; and A20 Sunnymead, Alresford near to the Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC. In order to prevent attracting gulls and crows etc, the 2012 HRA recommended that only inert waste (and not putrescible waste) is used to fill any void created through mineral extraction, should waste be required for restoration purposes.
- 2.75. This remains an issue and Site A31 Maldon Road, Birch, has been screened in for this reason. However, Site A20 Sunnymead has already been screened out by a project-level HRA which was undertaken when planning permission (ESS/17/18/TEN) was applied for the Site. This has now been granted.
- 2.76. The Council responded to the advice within the 2012 HRA by noting that: *“None of the Preferred Sites are likely to result in an increase of 200 Heavy Duty Vehicle movements per day on any road within 200m of a Natura 2000 site. On this basis, the Council has taken the view that it is not necessary to include extensive text in the Minerals Local Plan covering this matter. However, the Council has included some condensed text relating to this measure as supporting text to Policy S10: Protecting and Enhancing the Environment and Local Amenity: ‘Any proposals for mineral development will be expected to show compliance with the Habitat Regulations Assessment. Where a proposal would result in an increase of 200 daily HGV movements within 200m of a Natura 2000 site it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal’.*
- 2.77. It is accepted that since no actual Preferred Sites would be likely to trigger this requirement it would be excessive to include a large amount of detail in the Minerals Local Plan. As such, the condensed wording that the Council proposes is considered to be sufficient reference to require the need for analysis should any proposals result in a probable increase of over 200 Heavy Duty Vehicle movements per day within 200m of any sensitive European sites.

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

Screening categorisation

- 2.78. The Screening assessment is set out below in Chapter 3 of this report and Tables 7 and 8, and Appendix 1 consider each policy- including Preferred Sites- in the MLP. The results of the screening exercise are recorded, using the precautionary principle.
- 2.79. Each policy and Preferred Site included in the Minerals Local Plan has been categorised using the criteria in Figure 4 below. This system has been used to record the potential for policies and allocated 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.

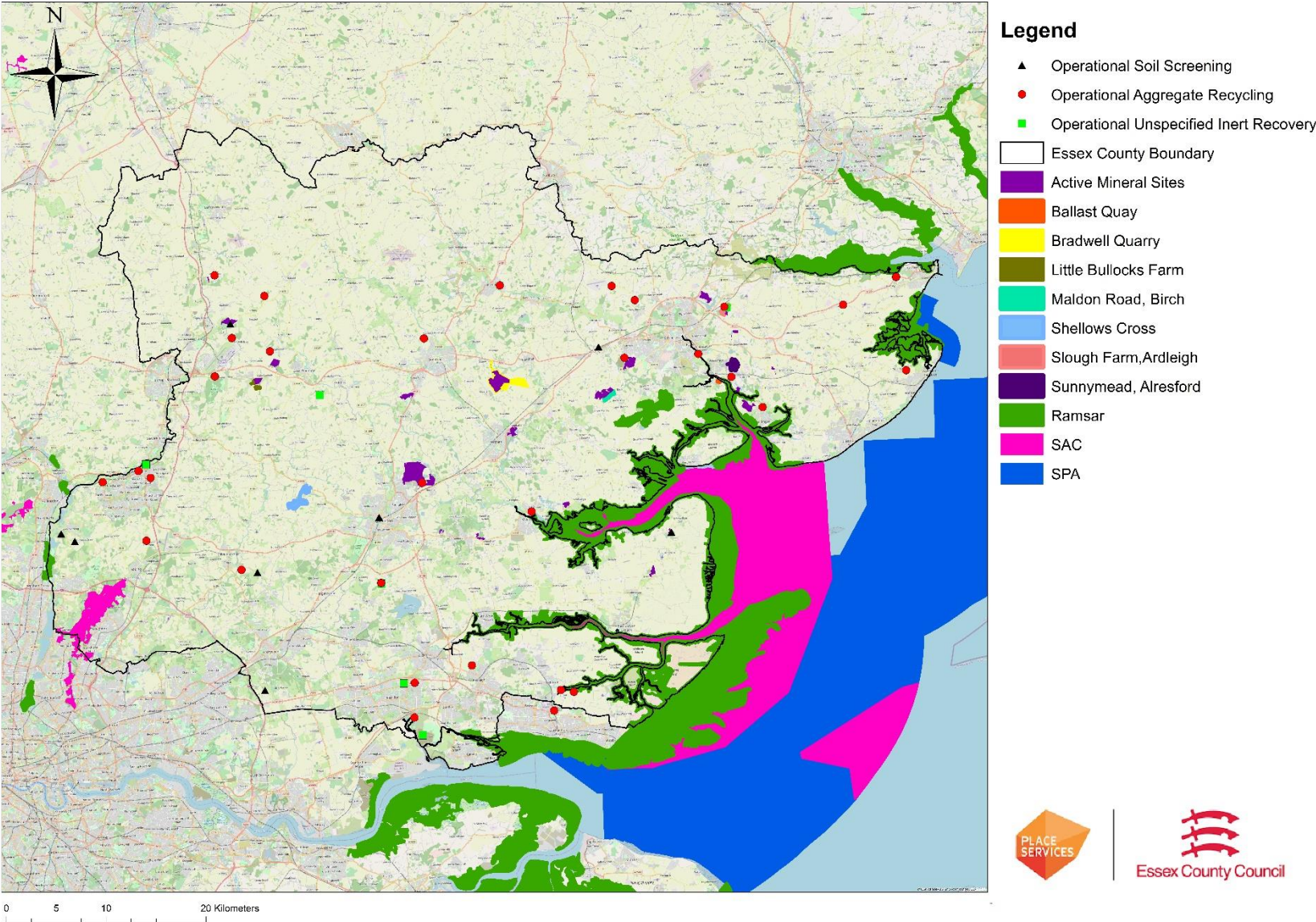
Category C: Likely Significant Effect

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 (Stage 1)

Screening of Habitats Sites

- 3.1. The Impact Risk Zones (IRZ) have been interrogated on MAGIC and these show which elements may have an effect. Map 1 below shows all Preferred Sites and all Habitats Sites within 20km of Essex. Map 1 below also shows aggregate recycling facilities and all Habitats Sites within 20km of Essex.
- 3.2. The sites screened in or out are shown in Table 5 below. Policy specific impacts on sites over 20km from the Plan area have been screened out for Likely Significant Effect due to the distance and the identified IRZ 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.



Map 1: Preferred Sites, Habitats Sites, Soil and Aggregate Sites and Active Minerals Sites within Essex

Table 5: List of Habitats Sites Screened in Showing Distance

Site	Location	Distance from Plan area	Removed from Assessment based on >20km distance?
North Downs SAC	Kent	43km	Yes
Staverton Park and the Thicks SAC	Suffolk	38km	Yes
Queendown Warren SAC	Kent	50km	Yes
Alde-Ore and Butley SPA, SAC and Ramsar	Suffolk	36km	Yes
Orfordness and Shingle Street SAC	Suffolk	33km	Yes
Devils Dyke SAC	Cambridgeshire, Suffolk	42km	Yes
Wormley-Hoddesdon Park Woods SAC	Hertfordshire	26km	Yes
Epping Forest SAC	Essex	18km	No
Hamford Water SPA, SAC and Ramsar	Essex	13km	No
Essex Estuaries SAC	Essex	1.3km	No
Peter's Pit SAC	Kent	46km	Yes
Eversden and Wimpole Woods SAC	Cambridgeshire	39km	Yes
Margate and Long Sands SAC	Kent	39km	Yes
Outer Thames Estuary SPA	Essex, Kent, Norfolk, Suffolk	28km	Yes
Foulness SPA and Ramsar	Essex	37km	Yes
Medway Estuary and Marshes SPA	Kent	40km	Yes
The Swale SPA and Ramsar	Kent	49km	Yes
Thames Estuary and Marshes SPA and Ramsar	Essex, Kent	29km	Yes
Dengie SPA and Ramsar	Essex	13km	No
Benfleet and Southend Marshes SPA and Ramsar	Essex	28km	Yes
Stour and Orwell SPA and Ramsar	Essex, Suffolk	6km	No
Colne Estuary SPA and Ramsar	Essex	1.3km	No
Blackwater Estuary SPA and Ramsar	Essex	6km	No
Deben SPA and Ramsar	Suffolk	30km	Yes
Crouch and Roach SPA and Ramsar	Essex	21km	Yes
Abberton Reservoir SPA and Ramsar	Essex	3km	No
Lee Valley SPA and Ramsar	Essex, Greater London, Hertfordshire	24km	Yes

Identifying Potential Effects to a Habitats Site from the Minerals Local Plan and Use of Impact Pathways

- 3.3. This section considers potential impact pathways which could connect any element of the MLP to Habitats Sites and thus lead to a Likely Significant Effect.
- 3.4. Table 6: *Habitats Sites Screened in for Further Assessment Showing Impact Pathways* below shows which pathways might be feasible. This is concluded through examination of the Impact Risk Zones on the MAGIC map and interrogation of the key vulnerabilities and issues affecting these Habitats Sites, as identified in the relevant Site Improvement Plans.
- 3.5. Where a potential impact pathway on a Habitats Site is identified, through which the MLP Preferred Sites could create a Likely Significant Effect, these are considered further below. Potential impact pathways between the MLP Preferred Sites and Habitats Sites have been ruled out due to distance (>20km), lack of hydrological connectivity or where the issues and key vulnerabilities, such as forestry and woodland management or water quantity, are unrelated to potential impacts from the MLP.

Land Take

- 3.6. There are no Preferred Sites that have been identified as falling directly within or adjacent to a Habitats Site. Ballast Quay marine wharf (transshipment site) is c.0.25km upstream of Colne Estuary SPA and Ramsar but is no longer safeguarded for minerals use 'beyond the lifetime of operations at Fingringhoe Quarry'.
- 3.7. Therefore, land take is not considered further within the scope of the HRA screening.

Impact of protected species outside the designated sites

- 3.8. Of the Habitats Sites screened in, the following have been identified as having the potential for the MLP to cause impacts on qualifying species outside the designated sites (functionally linked land) with the potential to result in a Likely Significant Effect:
- The Colne Estuary SPA and Ramsar
 - Abberton Reservoir SPA and Ramsar
- 3.9. Therefore, impacts on qualifying species outside designated sites (on functionally linked land) needs to be considered as having the potential for Likely Significant Effects.

Disturbance

- 3.11. Of the Habitats Sites within scope, only the Colne Estuary SPA and Ramsar site has been identified as disturbance having the potential for Likely Significant Effects either alone or in combination with other plans and projects.
- 3.12. There are no Preferred Sites scoped in that are located within 2km of the Habitats Site, except A20 Sunnymead, Alresford. This site is c.1.1km from the site but it is not visible from and is

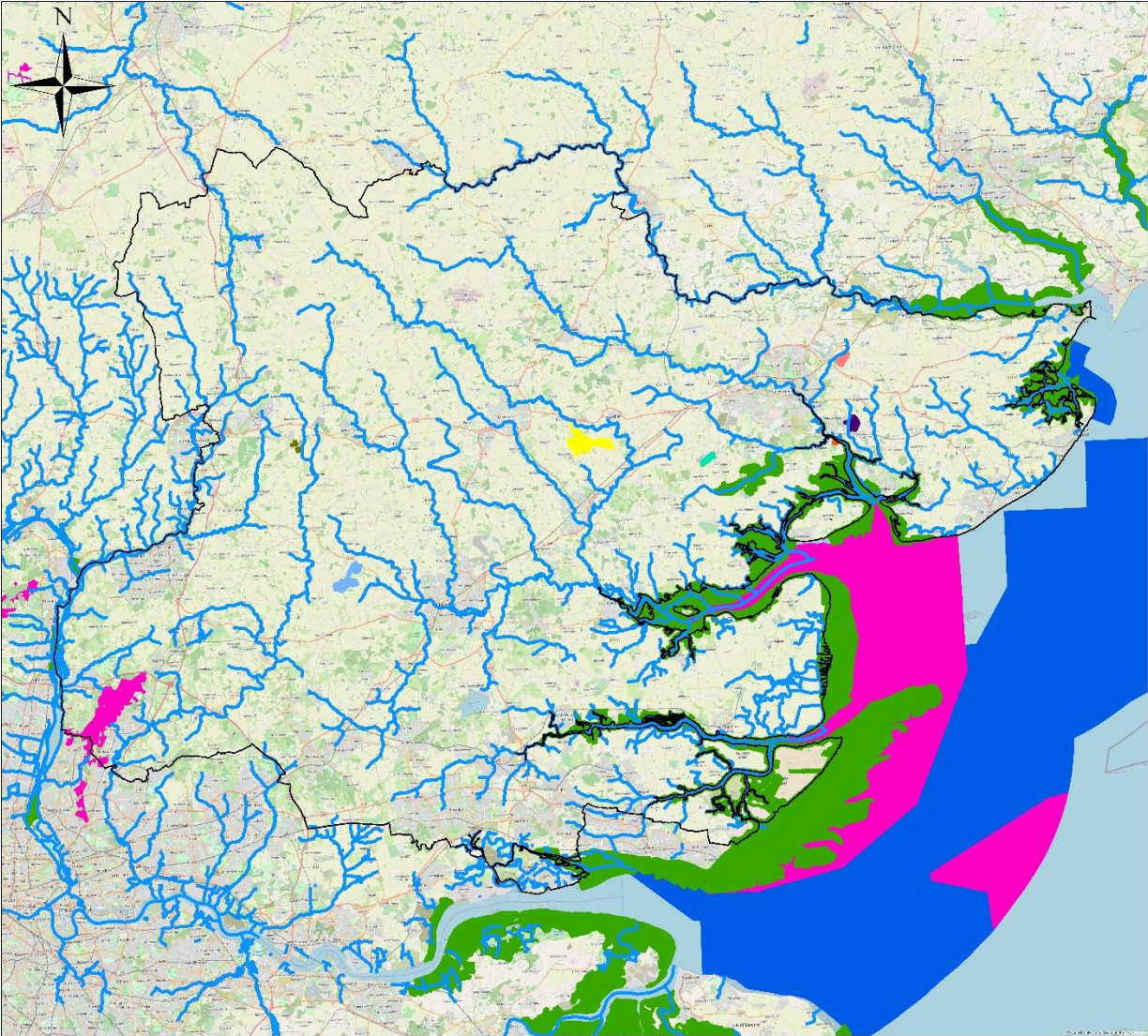
obscured from the Colne Estuary by landform and landscape features. The planning application (ESS/17/18/TEN) has also been subject to a project-level HRA (*Screening Report for Wivenhoe Quarry Eastern Extension*, by Place Services, 1st May 2019) which screened out all Likely Significant Effects.

- 3.13. Site A31 Maldon Road, Birch is nearly 2.5km from Abberton Reservoir SPA and Ramsar. It is included due to the issues raised by the 2012 HRA.
- 3.14. No new mineral transshipment sites are proposed by the MLP. Ballast Quay marine wharf (transshipment site) is c.0.25km upstream of Colne Estuary SPA and Ramsar site but is no longer safeguarded for minerals use 'beyond the lifetime of operations at Fingringhoe Quarry'. It has a Certificate of Lawful Existing Use or Development (CLEUD) but any new project proposal would require planning permission from the appropriate planning authority and is beyond the scope of the MLP.
- 3.15. The previously adopted Essex Minerals Local Plan (1996) (paragraph 3.156) identified the potential for a marine wharf facility at Parkeston Quay East, Harwich Port Authority. 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. This site is situated adjacent to the Stour Estuary and is near to the Stour Estuary SPA and Ramsar site.
- 3.16. Consequently, disturbance may result in impacts so Likely Significant Effect cannot be ruled out.

Water Quality and Quantity

- 3.17. Of the Habitats Sites screened in, the following have been identified as water quality having the potential for Likely Significant Effects (e.g. hydrological changes, inappropriate water levels or water pollution):
- Abberton Reservoir SPA and Ramsar
 - Blackwater Estuary SPA and Ramsar
 - Colne Estuary SPA and Ramsar
 - Essex Estuaries SAC
 - Hamford Water SPA, SAC and Ramsar
 - Stour and Orwell SPA and Ramsar
- 3.18. Therefore, water quality impacts must be considered further within the scope of the HRA screening.
- 3.19. With the exception of Abberton Reservoir, according to the Site Improvement Plans (SIPs), none of the above listed Habitats Sites are water-level sensitive. Lee Valley SPA and Ramsar site could be affected by hydrological changes and Epping Forest by inappropriate water levels but there are no causal pathways to these sites from Preferred Sites, so water quantity is no longer considered a likely impact pathway.
- 3.20. The water supply for Abberton Reservoir comes from the Ely-Ouse Transfer Scheme. The MLP will not affect this. Therefore, there is no water quantity impact pathway between the Plan and Abberton Reservoir SPA and Ramsar.

3.21. Map 2 shows the location of main rivers, Habitats Sites within scope and Preferred Sites - and therefore potential pollution pathways- can be found below (Habitats Sites, Main River Locations and Preferred Sites).



Legend

- Essex County Boundary
- Rivers
- Ballast Quay
- Bradwell Quarry
- Little Bullocks Farm
- Ramsar
- Maldon Road, Birch
- Shellows Cross
- Slough Farm, Ardleigh
- Sunnymead, Alresford
- Ramsar
- SAC
- SPA



Map 2: Preferred Sites and Main Rivers

Air Quality

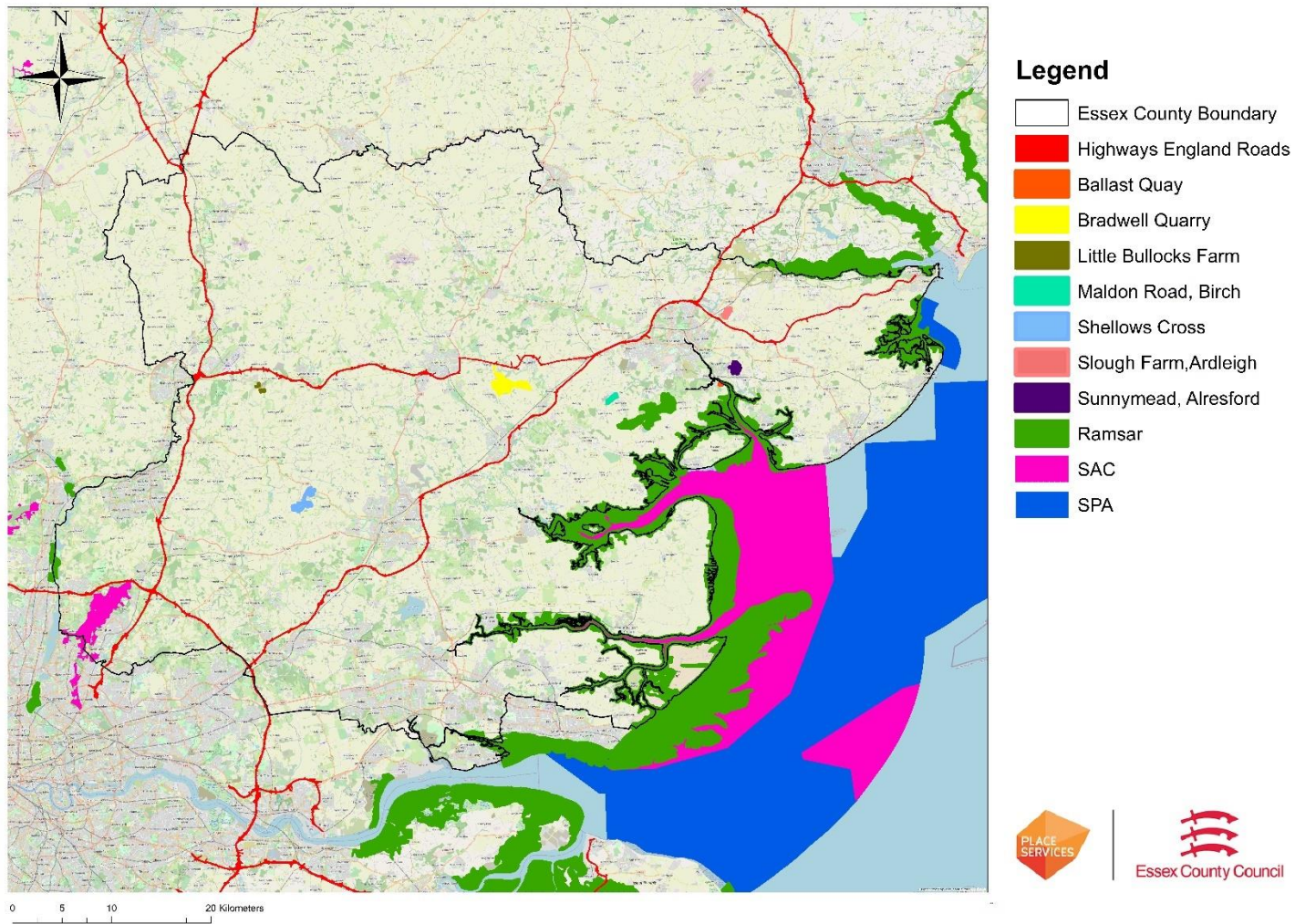
3.22. Of the Habitats Sites scoped in, the following have been identified as having the potential for Likely Significant Effects being caused by air quality.

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

3.23. There are no Preferred Sites within 200 metres of a Habitats Site, and major roads nearby tend to lead away from them. However, it is not possible to rule out a Likely Significant Effect on the grounds of air quality impacts resulting from transport of minerals from individual Preferred Sites as there is insufficient information to justify such a conclusion.

3.24. 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 SPA and Ramsar and any vehicles passing to Suffolk may use this road over the Orwell Bridge. Therefore, air quality impacts from the MLP either alone or in combination with other plans and projects cannot be ruled out at screening stage. It is therefore considered that air quality impacts from individual Preferred Sites needs further assessment.

3.25. Map 3 showing the location of roads, Habitats Sites within scope and Preferred Sites can be found below.



Map 3: Major Roads, Habitats Sites and Preferred Sites

3.26. Table 6 below considers each Habitats Site screened in and sets out the possible effects from quarrying activities on the qualifying features.

Table 6: Habitats Sites Screened in for Assessment Showing Impact Pathways

Habitats Site	Impact/ causal connection	Development Operation/ activity	Effect	Qualifying Features Affected ⁷
Epping Forest SAC	Air Quality: Increased traffic as close to M25	Lorry transportation to and from quarries	Nitrogen deposition	H4010- Wet heathland with cross-leaved heath, H4030- European dry heaths, H9120- Beech forests on acid soils. 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.
Hamford Water SPA, SAC and Ramsar	Air Quality: Plant machinery and lorry transportation to and from quarries. Water Quality: Rivers and tributaries.	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 estuarine moth spends some of life cycle stages below ground it may be affected by ground water levels.	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 to changes in air quality. 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.
Essex Estuaries SAC	Air Quality: Plant machinery and lorry	Lorry transportation to and from quarries.	Pollutants to surface water / water courses	Glasswort and other annuals colonising mud and sand, Cord-grass swards, Atlantic salt meadows, Mediterranean

⁷ 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/ causal connection	Development Operation/ activity	Effect	Qualifying Features Affected ⁷
	<p>transportation to and from quarries.</p> <p>Water Quality: Via rivers and tributaries.</p> <p>Disturbance: Noise, dust and lights, recreation as after use.</p>	<p>General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration</p>	<p>Changes in vegetation composition of breeding areas.</p> <p>Sudden noises causing birds to take flight.</p>	<p>saltmarsh scrub. Increased nutrient levels affecting habitats onsite.</p> <p>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-reading shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition. Natural England notes that further investigation of potential atmospheric nitrogen impacts on the site is required.</p>
Stour and Orwell SPA and Ramsar	<p>Air Quality: Plant machinery and lorry transportation to and from quarries.</p> <p>Water Quality: Through River Stour and its tributaries</p> <p>Disturbance to birds</p> <p>Use of estuary to transport to/ from current and future Transshipment sites</p>	<p>Lorry transportation to and from quarries. Transshipment</p> <p>General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration e.g. recreation</p>	<p>Nitrogen deposition</p> <p>Pollutants to surface water / water courses</p> <p>Importing Non-native invasive species on ships</p>	<p>Breeding: Avocet.</p> <p>Migratory species: Black-tailed Godwit, Dunlin, Grey Plover, Pintail, Redshank, Ringed Plover, Shelduck, Turnstone</p> <p>Water bird assemblage (non-breeding): Various recreational activities likely to impact Habitats supporting breeding and overwintering water birds.</p> <p>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.</p>
Colne Estuary SPA and Ramsar	<p>Air Quality, Water Quality, Disturbance and Impact on Protected Species outside of the protected site.</p>	<p>Lorry transportation to and from quarries. Transshipment</p>	<p>Nitrogen deposition</p> <p>Predation on Little tern.</p>	<p>Dark-bellied Brent goose, Breeding Little Tern, Ringed Plover and Common Pochard.</p> <p>Waterbird assemblage.</p> <p>Breeding population of Little Tern, a species particularly susceptible to</p>

Habitats Site	Impact/ causal connection	Development Operation/ activity	Effect	Qualifying Features Affected ⁷
	<p>Airborne: Plant machinery and lorry transportation to and from quarries.</p> <p>Water quality: Via rivers and tributaries feeding into the River Colne.</p> <p>Disturbance: Noise, dust and lights, recreation as after use.</p> <p>Use of estuary to transport to/ from current and future Transshipment sites</p>	<p>General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration.</p> <p>If restoration of this site to agriculture would involve any landfilling, it should also be ensured that putrescible waste is not used.</p>	<p>Pollutants/silt to surface water / water courses</p> <p>Importing Non-native invasive species on ships</p>	<p>predation by gulls attracted to putrescible waste.</p> <p>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.</p>
Blackwater Estuary SPA and Ramsar	<p>Airborne. Plant machinery and lorry transportation to and from quarries</p> <p>Water: Rivers and tributaries feeding into the River Blackwater</p>	<p>Lorry transportation to and from quarries</p> <p>General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration</p>	<p>Nitrogen deposition</p> <p>Pollutants to surface water / water courses</p>	<p>Dark-bellied Brent goose grey plover, dunlin, black-tailed godwit and Hen Harrier.</p> <p>Breeding Little tern, common pochard and ringed plover. Waterbird assemblage.</p> <p>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.</p>
Abberton Reservoir	Air Quality, Water Quality and Impact on	Lorry transportation to	Nitrogen deposition	Breeding Cormorant, Gadwall, Mute swan, Shoveler,

Habitats Site	Impact/ causal connection	Development Operation/ activity	Effect	Qualifying Features Affected ⁷
SPA and Ramsar	<p>Protected species outside the protected site</p> <p>Airborne: Airborne. Plant machinery and lorry transportation to and from quarries</p> <p>Water: Rivers and tributaries feeding into the Roman River upstream of the reservoir.</p> <p>Impact on Protected species outside the protected sites</p>	<p>and from quarries</p> <p>General quarrying activities e.g., extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration, including use of putrescible waste.</p>	<p>Pollutants and silt into surface water / water courses</p>	<p>Common pochard, Tufted Duck. Waterbird assemblage.</p> <p>The structure and function of the habitats which support this SPA feature may be sensitive to changes in air quality.</p> <p>Siltation from silt entering the reservoir from Layer Brook.</p> <p>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.</p> <p>The site is identified as at risk from air pollution as 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.</p>

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

Scoping and Screening of Policies (including Preferred Sites) for Likely Significant Effect

- 3.27. This section screens the Minerals Local Plan policies and identifies whether any of the MLP policies have the potential to have any Likely Significant Effects on any Habitats Sites, based upon Chapter 3 above and using Categories A, B and C above (Figure 4). Each policy is considered against the policy Screening criteria set out in Chapter 2.
- 3.28. Table 7: *Screening of Policies* and Table 8: *Screening of Preferred Sites (Policies P1 and P2)* set out the assessments and justifications for how elements of the Essex Minerals Local Plan have been screened in or out. They summarise the main ways in which the MLP could cause Likely Significant Effects. Some of the potential Likely Significant Effects could be mitigated through the implementation of other proposals in the Plan itself. A summary assessment is set out in Appendix 1.
- 3.29. Eleven policies, including two preferred sites, have been screened in during this process, which have the potential to affect seven Habitats Sites. 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 and sites (either alone or in combination, with other plans or projects) which may have a Likely Significant Effect on any Habitats Site.
- 3.30. The conclusions and recommendations from the 2012 HRA for the MLP, by URS, have been taken into account. All Preferred Sites and all policies were screened out as being unlikely to lead to a likely significant effect. However, two recommendations were made in relation to the policies. The first was with regard to Policy S11 (Access and Transportation). This recommendation concerns air quality impacts from traffic on Habitats Sites. The second recommendation concerned the prevention of the use of putrescible waste for site restoration on two Preferred Sites, one of which now has planning permission. The key recommendations are summarised in more detail above in the *Identifying potential effects to a Habitats Site from the Minerals Local Plan and Use of Impact Pathways* section of this HRA.
- 3.31. The potential impact pathways have now been identified above and these have been used in the Screening assessment, i.e. land take, impact of protected species outside the designated sites, water quality and quantity and air quality. These have been included in the screening assessment.

Policies S2: Strategic priorities for minerals development and S9: Safeguarding mineral transshipment sites and secondary processing facilities

- 3.32. While no new mineral transshipment sites are proposed by the MLP, the previously adopted Essex Minerals Local Plan (1996) (paragraph 3.147) 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, this Plan proposes 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.”

- 3.33. Therefore, Policy S9 is screened in as we cannot conclude that there would be no Likely Significant Effect (LSE) with respect to disturbance, water quality or air quality in relation to new mineral transshipment sites.
- 3.34. There are also mineral transshipment sites at Chelmsford, Harlow, Marks Tey and Ballast Quay, Fingringhoe. There are other small wharves which tranship a range of products including minerals, or which have the potential to tranship minerals. However, the Plan states that “no new transshipment sites which would be suitable in the future for establishing rail depots or marine wharves have come forward...”.
- 3.35. Ballast Quay marine wharf (transshipment site at Fingringhoe) is c.0.25km upstream of Colne Estuary SPA and Ramsar site. 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 emerging MLP advises that, “It would be inappropriate to continue safeguarding Ballast Quay, Fingringhoe 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.”
- 3.36. It is understood that the site has a Certificate of Lawful Existing Use for Development (CLEUD) which has established industrial use. Any future project would require planning permission from the appropriate planning authority and is beyond the scope of the MLP. This is therefore beyond consideration of this HRA and this element can be screened out.
- 3.37. Furthermore, any mineral applications coming forward on sites which are not allocated as Preferred Sites in the MLP may require project-level HRA if within an IRZ.

S5: Creating a network of aggregate recycling facilities

- 3.38. Policy S5 safeguards all existing aggregate recycling facilities in the county and sets out parameters for new facilities.
- 3.39. 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).*” This policy was screened out in 2012 as it was not actively merging or seeking any new aggregate recycling sites.
- 3.40. However, the Policy allows for permission of new sites at current minerals workings and other sites. There are no defined locations, so it is not possible to conclude that there will be no likely significant effect without more information about the location of the facilities, or by ensuring that adequate mitigation is in place. Any new sites may require project-level HRA if within an IRZ. Consequently, Policy S5 has been screened in.

S6: Provision for sand and gravel extraction

- 3.41. Policy S6 was screened out in the 2012 HRA because it considered that: “*the main aspect of this policy is the allocation of Preferred Sites...These have already been assessed in the preceding*

table and a conclusion of ‘no likely significant effect’ has been drawn. The policy does not seek to promote any other sites beyond the Preferred Sites”.

3.42. However, Policy S6 has been screened in to this HRA 2021 because it also enables sites to come forward at non-Preferred Sites if certain criteria are met. It was therefore not possible to conclude Likely Significant Effect without more information about the location of the sites, or by ensuring adequate mitigation is in place. Any new facilities may require project-level HRA if within an IRZ.

3.43. Specific issues relating to Preferred Sites are discussed under Policies P1 and P2, which are screened in.

Policy S8: Safeguarding mineral resources and mineral reserves

3.44. Policy S8 was screened out in the 2012 HRA because the “policy is concerned exclusively with safeguarding minerals reserves rather than promoting their extraction in particular locations. ...there is no presumption that resources defined will be worked. As such, it will not result in a likely significant effect on any European [i.e. Habitats] sites”.

3.45. However, Policy S8 is screened into this HRA 2021 because, without having the knowledge or certainty of specific locations, it was not possible to conclude that there would be no Likely Significant Effect. Any new sites may require project-level HRA if within an IRZ.

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

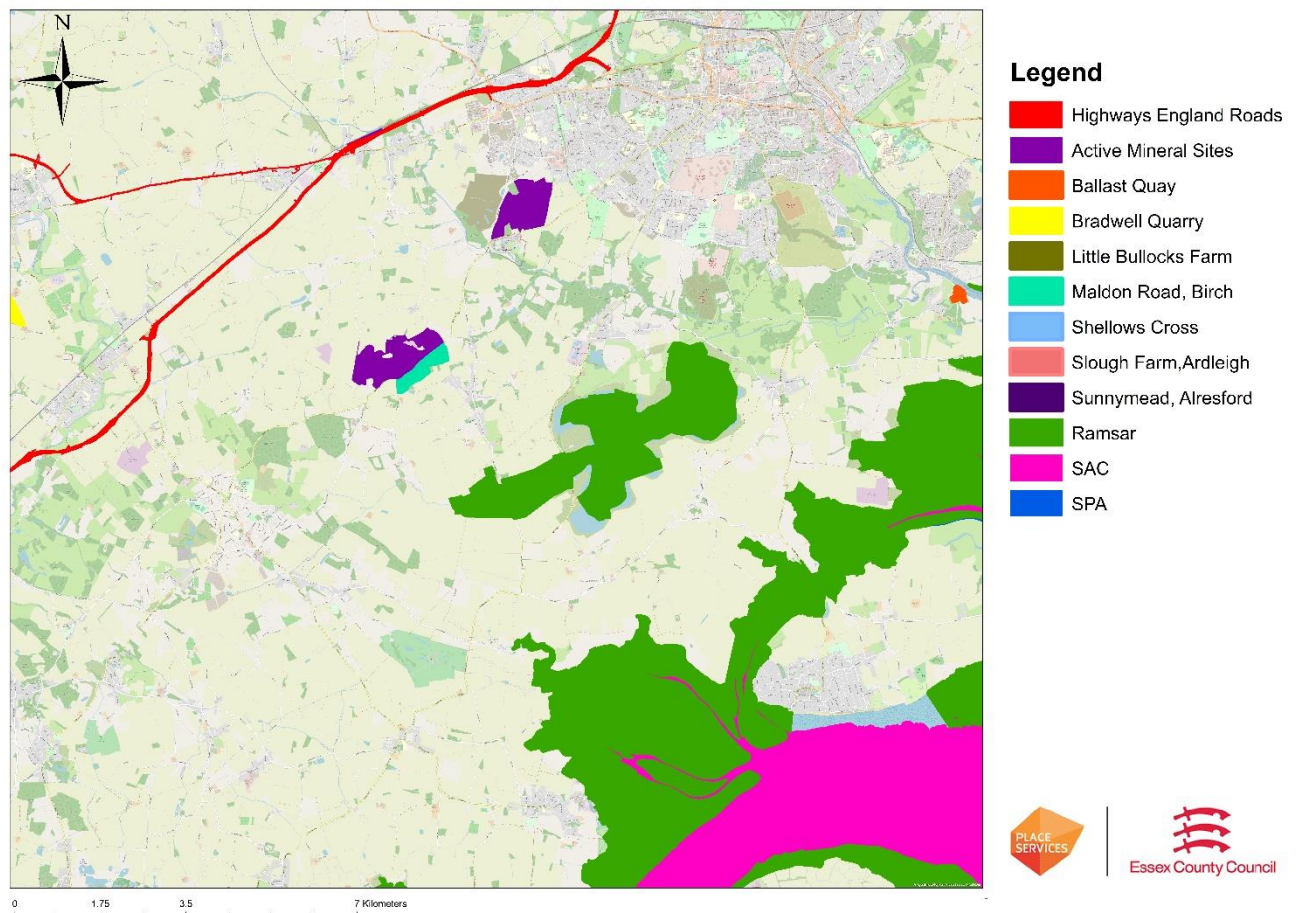
3.46. The first recommendation of the HRA 2012 related to air quality, particularly in relation to the effect of NO_x caused by vehicle emissions. Policies involving transportation to and from minerals sites have been screened in as they need further consideration with respect to air quality, which is increasingly being recognised as a significant area of concern in terms of its impacts upon sensitive wildlife sites. The proposed removal of the low-level restoration restriction in Policy S12 as part of this review also allows for the potential increase of lorry movements to import waste to sites.

3.47. 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.”

- 3.48. The Screening process has identified that additional detailed work is required to explore issues around air quality. Policy S11: Access and Transportation will be considered further in the Appropriate Assessment.
- 3.49. The emerging MLP proposes that Policy S11 states that “*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*’. S11 also 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).*”.
- 3.50. This is a positive aspiration. However, 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. There are no minerals sites near to Epping Forest. However, transport routes to and from Preferred Sites is not known. While lorry movements to minerals sites may or may not increase, further research is needed to ensure that there is no Likely Significant Effect, in combination with other plans and projects. Consequently, S11 needs consideration at Appropriate Assessment. Advice is needed from Natural England.
- 3.51. The following map shows the area around Site A31 Maldon Road, Birch and Abberton Reservoir SPA and Ramsar site and the local road network.



Map 4: Major Road Network near Site A31 Maldon Road, Birch and Abberton Reservoir SPA and Ramsar

Policy S12: Mineral Site Restoration and After-Use

3.52. The second recommendation of the HRA 2012 relates to restricting the waste streams for restoration of two specific quarries due to their proximity to Habitats Sites, i.e. A31 Maldon Road, Birch due to its proximity to Abberton Reservoir SPA and Ramsar site; and A20 Sunnymead, Alresford which is near to Colne Estuary SPA and Ramsar site and the Essex Estuaries SAC. Abberton Reservoir qualifying features include breeding cormorants (SPA) and the Ramsar site identifies peak counts of Gadwall and Northern Shoveler in the spring/autumn (implying breeding of these species). Breeding Little Tern is a qualifying species for Colne Estuary SPA and Ramsar site. These species are sensitive to predation by gulls and crows, which could cause disturbance.

3.53. In order to prevent attracting gulls and crows to these minerals sites, the 2012 HRA recommended that putrescible waste is not used to fill any void created through mineral extraction which could result in impacts on designated features of Habitats Sites, should waste be required for restoration purposes. These recommendations of the 2012 HRA are still relevant to the current HRA.

- 3.54. Both Preferred Sites A20 Sunnymead, Alresford and A31 Maldon Road, Birch (extension to the existing Birch Quarry) sites are 'Flagship sites' under Policy S12 of the MLP, requiring priority habitats to be created using low level restoration (as well as some arable restoration using inert waste).
- 3.55. A scheme at A20 Sunnymead, Alresford (ESS/17/18/TEN- Wivenhoe Quarry extension) has planning consent and the restoration includes priority habitats to be created using low level restoration and arable restoration using inert waste. This site will receive inert waste only. Any discharges will be managed through operational stages of the quarry. A project-level HRA (*Screening Report for Wivenhoe Quarry Eastern Extension*, by Place Services, 1st May 2019) has screened out all Likely Significant Effect for this proposal. Site A20 has therefore been screened out from further assessments.
- 3.56. No scheme has yet been submitted for A31 Maldon Road, Birch (*extension to the existing Birch Quarry*) although the operator has indicated that it will submit one during the life of the MLP. No imported waste is proposed for this site in either the MLP or Waste Local Plan. It is unknown, but possible, that waste could be imported as a result of the MLP changes in 2021, but it is not anticipated that the restoration scheme would need to include putrescible waste. The additional safeguards proposed in the 2012 HRA in relation to A31 Maldon Road, Birch with respect to avoidance of putrescible waste should be embedded within the MLP. Site A31 has therefore been screened in for further consideration at Appropriate Assessment.
- 3.57. 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 MLP. Recreation as an after use has been screened out with respect to Preferred Sites as none are in close enough proximity to Habitats Sites. However, recreation as an after-use cannot be screened out for any non-preferred sites which come forward during the life of the MLP as their locations are as yet unknown.

DM1: Development Management Criteria

- 3.58. On the advice of the HRA 2012, supporting text for Policy S10 (Protecting and enhancing the environment and local amenity) makes specific reference to protection to Habitats Sites in relation to HGV movements and air quality. This has been screened out.
- 3.59. The need to avoid adverse effects on the integrity of Habitats Sites (European sites) is also included within the supporting text of DM1, in Paragraph 5.41.
- 3.60. The need to avoid adverse effects on integrity of Habitats Sites is however, not explicitly set out within any policy of the MLP. It should be included within a policy of the Plan to ensure that any unknown sites/ facilities coming forward under any policy are considered appropriately and DM1 might be the most appropriate policy to deliver this.
- 3.61. Paragraph 5.41 does not provide sufficient clarity with respect to the requirements of the Conservation of Habitats and Species Regulations in relation to avoiding adverse effects on the integrity of Habitats Sites and additional text is likely to be required. This is addressed in the Appropriate Assessment (Recommendations).
- 3.62. Paragraph 5.15 in the supporting text of DM1 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 therefore a potential Likely Significant Effect. A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites. Advice is needed from Natural England.

3.63. These issues raised above will require further consideration, and potentially mitigation such as changes and additions to DM1. DM1 is therefore screened in to ensure no Likely Significant Effects and is thus carried forward to the Appropriate Assessment.

DM3: Primary Processing Plant and DM4: Secondary Processing Plant

3.64. DM3 and DM4 were screened out by the 2012 HRA on the grounds that they do not promote or seek to deliver development and so will not lead to a likely significant effect on any Habitats Sites.

3.65. Policy DM3 requires that minerals extraction will only be permitted where it can be demonstrated that the primary processing plant will not have an unacceptable impact on the 'surrounding environment'.

3.66. DM4 requires that it should be demonstrated that there would be no unacceptable impact upon the local environment.

3.67. However, they do not contain a requirement for project level HRA or avoidance of Likely Significant Effect on Habitats Sites. Therefore, this HRA has screened in DM3 and DM4 as it cannot conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring that adequate mitigation is in place.

P1: Preferred Sites for Sand and Gravel Extraction and P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh); Preferred Sites (B1, A31)

3.68. A31 Maldon Road, Birch is hydrologically connected to the Colne Estuary. A water course runs through the Site which feeds into the Roman River, and this ultimately feeds into the River Colne. Colne Estuary SPA and Ramsar are approximately 14km downstream.

3.69. B1 Slough Farm, Ardleigh is also upstream of the Colne Estuary. This Site is adjacent to a water course which has hydrological connection to Salary Brook, which feeds into the River Colne. It is approximately 10km, by travelling along the water courses, from the Colne Estuary SPA and Ramsar site

3.70. The ⁸Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) (SPG) proposes that it is restored to Open Mosaic Habitat, Reedbeds, open water and Woodland.

A precautionary approach has been taken for both sites and, as mitigation may be required, both sites and their associated policies- i.e. B1, A31, P1 and P2 - have therefore been screened in for further assessment.

⁸ The Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) can be found at: <https://www.essex.gov.uk/minerals-waste-planning-policy/minerals-local-plan>

Table 7: Screening of Policies

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
1.0 Introduction	A	Scope out	General aspirations, background information and scene setting. No LSE.
2.0 Spatial Portrait and Key Minerals Planning Issues	A	Screen out	General aspirations, setting out issues and background information. This has been updated for 2021. Major Infrastructure Schemes are listed in Paragraph 2.19. These are considered in the <i>in-combination</i> section of the Appropriate Assessment.
3.0 The Strategy (spatial vision, aims and strategic objectives, spatial priorities for minerals development and presumption in favour of sustainable development).	A	Screen out	General high-level aspirations that would not cause a LSE without the details provided under more specific policies.
S1: Presumption in favour of sustainable development	A	Screen out	High-level underpinning policy aiming to ensure sustainable development at all times. No LSE.
S2: Strategic priorities for minerals development	C	Screen out	General high-level aspirations that would not cause a LSE without the details provided under more specific policies.

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>This is a high-level strategic policy about meeting the mineral supply needs of Essex whilst achieving sustainable development.</p> <p>Part 9 of the Policy sets out the principle of:</p> <p><i>“Maintaining and safeguarding transshipment sites within the County to provide appropriate facilities for the importation and exportation of minerals.”</i></p> <p>One of the transshipment sites is a marine wharf facility at Parkeston Quay East, Harwich Port 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.</p> <p>Transshipment sites are discussed in more detail under Policy S9.</p>
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.
S4: Reducing the use of mineral resources	A	Screen out	General plan-wide high-level aspiration. No change to 2012 HRA.
S5: Creating a network of aggregate recycling facilities	C	Screen in	<p>Policy S5 safeguards all existing aggregate recycling facilities in the county and sets out parameters for new facilities.</p> <p>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</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>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.</p> <p>The Policy allows for permission of new sites at current minerals workings and other sites but there are no defined locations. Any new sites 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.</p>
S6: Provision for sand and gravel extraction	C	Screen in	<p>This policy was screened out in the 2012 HRA. However, it enables sites to come forward as 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.</p> <p>Specific issues relating to Preferred Sites are discussed under Policies P1 and P2, which are screened in.</p>
S7: Provision for industrial minerals	A	Screen out	<p>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.</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
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 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.
S9: Safeguarding mineral transshipment sites and secondary processing facilities	C	Screen in	<p>Policy S9 aims to safeguard transshipment sites and secondary processing facilities. It was screened out in the 2012 HRA.</p> <p>No new mineral transshipment sites are proposed by MLP. However, (MLP 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 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.</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>There are existing mineral transshipment sites at Chelmsford, Harlow, Marks Tey and Ballast Quay, Fingringhoe. No new transshipment sites which would be suitable in the future for establishing rail depots or marine wharves have come forward. Ballast Quay marine wharf (transshipment site at Fingringhoe) is c.0.25km upstream of Colne Estuary SPA and Ramsar site. The MLP advises (in 3.156): that it would be inappropriate to continue safeguarding the Quay once extraction at Fingringhoe 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.</p> <p>For any new developments, 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 and may potentially require mitigation.</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
S10: Protecting and enhancing the environment and local amenity	A	Screen out	<p>Policy stating how the MLP should protect the environment and could enhance, including Biodiversity Net Gain. It was screened out in the 2012 HRA.</p> <p>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 MLP has been proposed to include the following underlined words:</p> <p><i>“Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment. Currently where a proposal would result in an increase of 200 daily HGV movements within 200m of a Natura 2000 a <u>Special Area of Conservation (SAC), Species Protection Area (SPA) OR Ramsar site</u> it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal.”</i></p> <p>The amendments to the text could not cause LSE and are considered to be sufficiently minimal to allow the policy to remain screened out.</p>
S11: Access and Transportation	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’.

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>The proposed amendment to S11 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).”</p> <p>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 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.</p>
S12: Mineral Site Restoration and After-Use	C	Screen in	Policy dealing with options for restoration and after-use. The updated MLP 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, but S12 now also

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>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 MLP'.</p> <p>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.</p> <p>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.</p> <p>No details have been submitted for A31 Maldon Road, Birch and so it is unknown, but possible, that waste could be imported as a result of the proposed MLP amendments in 2010. Mitigation was not embedded into the MLP 2014. This is screened in, along with Preferred Site A31.</p> <p>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.</p> <p>Recreation as an after use has been screened out with respect to Preferred Sites as none are in close enough proximity to Habitats Sites.</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
P1: Preferred Sites for Sand and Gravel Extraction	C	Screen in	<p>This policy includes all of the Preferred Sites, i.e. 16 allocations on 10 sites, of which 13 are extensions to existing quarries and three are new sites. The emerging MLP 2021 is proposing to incorporate the Reserve Sites as Preferred Sites. All Preferred Sites without planning permission have been scoped in. The screening of 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.</p>
P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh)	B	Screen in	<p>P2 includes only one Preferred Site. The screening of Preferred Sites is set out in Table 9 below.</p> <p>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.</p>
DM1: Development Management Criteria	C	Screen in	<p>DM1 was screened out by the 2012 HRA.</p> <p>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 MLP to cover all elements, including unforeseen or unknown elements, such as windfall sites.</p> <p>Policy DM1 includes requirements in relation to transport in paragraph</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
			<p>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 consideration is required with respect to transport, particularly in relation to potential air quality impacts. A transport assessment may be required.</p> <p>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.</p>
DM2: Planning Conditions and Legal Agreements	A	Screen out	<p>General statement of policy. No LSE. It was screened out by the 2012 HRA.</p> <p>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 and measures to alleviate noise pollution.</p>

Policy/ element of MLP 2021	Category A, B or C?	Will there be Likely Significant Effect (LSE) on Habitats Sites? Screen in/out?	Assessment and Justification
DM3: Primary 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.
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 ensuring that adequate mitigation is in place.
IMR1: Implementation, Monitoring and Review	A	Screen out	Policy that cannot lead to development or other change.
Appendix 1: Site profiles for Preferred Sites	A	Scoped out	Background information

Table 8: Screening of Preferred Sites (Policies P1 and P2)

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
A6 & A7	Bradwell Quarry, Rivenhall (extension)	General quarrying activities e.g. extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration.	River Blackwater- Water quality	No. Screen out	<p>Site is c.13km from nearest Habitats Site (Abberton Reservoir), but there is no pathway of impact to Abberton Reservoir.</p> <p>Bradwell Quarry is close to River Blackwater which feeds into the Blackwater Estuary 24km downstream. General protection measures would be embedded into any planning permissions.</p> <p>The potential in combination impacts of any additional effects from water quality</p>	No change.

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
					would be unlikely over such long distances and are considered over-precautionary.	
A 20	Sunnymead Alresford	General quarrying activities e.g. extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration. Use of waste for restoration.	Water Quality (Hydrological connectivity via Sixpenny Brook, to the Colne Estuary) Disturbance of species (Breeding Little Terns) Air Quality Functionally linked land.	No. Screen out	C. 1.5 to 2.5 km from closest Habitats Site (Colne Estuary SPA/Ramsar). Putrescible waste issue was raised in 2012 HRA (under S12)- i.e. this should be prevented as it could encourage gulls which could predate little terns. A planning application has been submitted for this Site (ESS/17/18/TEN). This has been approved by the planning committee and is awaiting final approval of the legal	No change

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
					agreement. ECC has undertaken a project level HRA. All potential effects were screened out as adequate measures built into the permission.	
A22 & A23	Little Bullocks Farm, Little Canfield	General quarrying activities e.g. extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration.	Water Quality	No. Screen out	Approx. 21km from closest Habitats Site- Lee Valley SPA and Ramsar No hydrological pathway of impact - Lee Valley SPA and Ramsar There is no hydrological connectivity between this Site and Lee Valley.	No change.
A31	Maldon Road, Birch	General quarrying activities e.g. extraction and ancillary facilities,	Water Quality Disturbance to species	Yes. Screen in.	A water course runs through the Site which feeds into the Roman River, and this ultimately feeds into the River	Yes. A31 was screened out in 2012. However, the issue of disturbance

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
		dewatering, secondary processing activities, transportation and some types of restoration. Use of waste for restoration.	(breeding cormorants)		<p>Colne. Colne Estuary SPA and Ramsar are approximately 14km downstream. A precautionary approach is taken and so mitigation may be required. Approximately 2.5km from Abberton Reservoir (closest Habitats Site), but no direct hydrological connection to Abberton Reservoir. There is no hydrological connection to Layer Brook before it feeds into Abberton Reservoir from the south. Layer Brook leaves Abberton Reservoir at its northern point and joins the Roman River.</p> <p>Nitrogen deposition is likely to be coming from water sources not air. Currently a low-level</p>	arising from putrescible waste on A31 to breeding cormorants was raised under Policy S12 rather than A31 (which was screened out with mitigation embedded).

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
					<p>restoration site. The Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) SPG proposes that it is restored to Open Mosaic Habitat, Reedbeds, Open Water and Woodland. Potential for disturbance to nests of SPA qualifying features (breeding cormorants) from gulls and crows if putrescible waste is used. The 2012 HRA advised that infilling should use inert waste and not use putrescible waste (under S12) for this reason. Potential air quality issues during transportation to and from site.</p>	

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
A40	Shellows Cross, Roxwell / Willingale	General quarrying activities e.g. extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration.	Water Quality	No. Screen out.	<p>Approx. 23km from closest Habitats Site- Blackwater Estuary SPA and Ramsar.</p> <p>A planning application has been submitted for Phase 1, the northern section of this site, but permission has not been granted yet. The planning application number is ESS/77/20/CHL. Planning permission has not yet been sought for the southern area of this allocation.</p> <p>The northern site is approximately 1.7km from a major river, and the southern section is 1km from a major river. There is hydrological connectivity between this river and the Blackwater Estuary</p>	No change

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012
					SPA and Ramsar, but this site allocation is approximately 23km upstream of the SPA and Ramsar and therefore considerations of LSE, in combination, from water quality are considered to be over-precautionary.	
B1	Slough Farm, Ardleigh	General quarrying activities e.g. extraction and ancillary facilities, dewatering, secondary processing activities, transportation and some types of restoration. Use of waste for restoration.	Water Quality	Yes, screen in.	<p>Approximately 6.5km from closest Habitats Site (Colne Estuary).</p> <p>This Site is close to- and has hydrological connection to- Salary Brook which feeds into the River Colne. Possible requirement for mitigation measures.</p> <p>Possible in combination effects.</p>	Yes, water quality was not considered in the 2012 HRA, which did not identify any impact pathways for B1.

Site No.	Preferred Site	Development Operation/ activity	Pathway/ causal connection and effect	Will there be Likely Significant Effect (LSE) on Habitats Sites without mitigation? Screen in/out?	Assessment Justification	and Change from HRA Conclusion in 2012

In Combination Effects

- 3.71. The underlying intention of the in-combination provision is to take account of cumulative effects. This is in order to ensure that plans or projects which, individually, would not have significant effects on site, may combine with the effects of other plans and projects to result in significant effects. Without this process these residual effects would not be properly assessed.
- 3.72. Only the effects of other plans or projects that could add cumulatively to the effects of the MLP to cause an effect on a Habitats Site should be included in addition to the MLP.
- 3.73. Most policies and Preferred Sites have been screened in or out above as having the potential for Likely Significant Effect alone. Any that do not have Likely Significant Effect alone, but may have residual effects were then considered in combination and Tables 7 and 8 above also show where there is the possibility for in combination effects.
- 3.74. The impact pathways that were not taken forward for Likely Significant Effect have also been considered in combination. Impact pathways that were screened out for potential in combination effects are land take, impacts to designated species outside the protected site and water quantity. All Preferred Sites are too far from the Habitats Sites for there to be any residual effects at all from the first two of these pathways. There is no possibility of residual effects to other forthcoming development applications, providing that the Conservation of Habitats and Species Regulations are implemented properly. With respect to water quantity, 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: ... The quality and quantity of water within water courses, groundwater and surface water”.*
- 3.75. DM1 is sufficient to control any residual water quantity issues arising from any unknown development.
- 3.76. Table 9 below 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 are set out within the Screening Table in Appendix 1: HRA Screening of Individual Policies.

Table 9: 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	Potential for In Combination Effects
S1: Presumption in favour of sustainable development	x	x	x	x	x	x
S2: Strategic priorities for minerals development	x	✓	✓	✓	✓	✓
S3: Climate change	x	x	x	x	x	x
S4: Reducing the use of mineral resources	x	x	x	x	x	x
S5: Creating a network of aggregate recycling facilities	x	✓	✓	✓	✓	✓
S6: Provision for sand and gravel extraction	x	✓	✓	✓	✓	✓
S7: Provision for industrial mineral	x	x	x	x	x	x
S8: Safeguarding	x	✓	✓	✓	✓	✓

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality	Potential for In Combination Effects
mineral resources and mineral reserves						
S9: Safeguarding mineral transshipment sites and secondary processing facilities	✓	✓	✓	✓	✓	✓
S10: Protecting and enhancing the environment and local amenity	x	x	x	x	x	x
S11: Access and Transportation	x	x	✓	x	✓	✓
S12: Mineral Site Restoration and After-Use	x	✓	✓	x	✓	✓
P1: Preferred Sites for Sand and Gravel Extraction	✓	✓	✓	✓	✓	✓

Policy	Land Take	Impacts to designated species outside the protected Site	Disturbance to Habitats/ Species	Water Quality and Quantity	Air Quality	Potential for In Combination Effects
P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh)	x	x	x	✓	x	✓
DM1: Development Management Criteria	✓	✓	✓	✓	✓	✓
DM2: Planning Conditions and Legal Agreements	x	x	x	x	x	x
DM3: Primary Processing Plant	x	✓	✓	✓	✓	✓
DM4: Secondary Processing Plant	x	✓	✓	✓	✓	✓
A6 & A7: Bradwell Quarry, Rivenhall (extension)	x	x	x	x	x	x
A20: Sunnymead, Alresford	x	x	x	x	x	x
A22 & A23: Little Bullocks Farm, Little Canfield	x	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	Potential for In Combination Effects
A31: Maldon Road, Birch	x	x	✓	✓	✓	✓
A40 Shellows Cross, Roxwell / Willingale	x	x	x	x	x	x
B1: Slough Farm, Ardleigh	x	x	x	✓	x	✓

Review of MLP Policies and Policies Carried Forward to Appropriate Assessment Stage

3.77. Policies have been considered above in the section entitled Assessing for any Significant Effects on a Habitats Site from the Plan, Either Alone or in Combination, with Other Plans or Projects and Tables 7 and 8 above summarise the screening decision for each policy and Preferred Site. Those policies marked as categories B or C in Table 7 are screened in for further assessment as Likely Significant Effects cannot not be ruled out either alone, or in combination with other plans and projects, without taking mitigation into account.

3.78. Table 9 above summarises the policies which have been assessed as having the potential to cause a Likely Significant Effect on Habitats Sites when considering the different potential impact pathways.

3.79. 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 are set out within the Screening Table in Appendix 1: HRA Screening of Individual Policies.

3.80. Proposals which have the potential to adversely affect Habitats Sites (Ramsar sites, Special Protection Areas and Special Areas of Conservation) will require appropriate assessment in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) before determination. At this stage mitigation can be considered.

3.81. Policies (including Preferred Sites) screened in for further assessment following application of Stage 1 are:

- 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 transshipment 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

3.82. Policy S10 has been screened out but a minor amendment has also been proposed for it. This policy includes supporting text about the Habitats Regulations and provides specific protection in relation to lorry movements and air quality. During the process of reviewing the MLP, this HRA has proposed to include the following underlined words in section 3.169:

“Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment. Currently, where a proposal would result in an increase of 200 daily HGV movements within 200m of a Habitats Site it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal.”

3.83. The amendments to the text could not cause Likely Significant Effect and are considered to be sufficiently minimal to allow the policy to remain screened out.

Habitats Sites within Scope for Appropriate Assessment

3.84. The potential impact pathways between Habitats Sites and Minerals Local Plan policies identified at Screening Stage are shown in Table 10 below.

Table 10: Habitats Sites, Impact Pathways and Examples of 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
Land take of protected sites	No Habitats Sites. Planning applications at unknown locations could cause LSE on any	Any land take within a Habitats Site is likely to have a direct adverse impact upon site integrity through	No. There is sufficiently robust legislation (The Conservation of

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
	Habitats Site within Essex.	habitat loss or degradation. No Preferred Sites are within or adjacent to Habitats Sites.	Habitats and Species Regulations 2017, as amended) to protect against this.
Impacts to designated species outside the protected site	Abberton Reservoir SPA and Ramsar Colne Estuary SPA and Ramsar Planning applications at unknown locations could cause LSE on any Habitats Site within Essex.	Putrescible waste used for restoration attracting gulls and crows, which could increase predation of qualifying species e.g. Little Terns or breeding cormorants. A31 Maldon Road, Birch.	No, there is a sufficiently robust legislation (The Conservation of Habitats and Species Regulations 2017, as amended) policy to protect against this.
Disturbance to habitats/ species (within or outside a Habitats Site) Recreational disturbance	Colne Estuary SPA and Ramsar Essex Estuaries SAC Stour and Orwell SPA and Ramsar Planning applications at unknown locations could cause LSE on any Habitats Site within Essex.	S5, S6, S8, S9, S11, S12, P1, S12, DM1, A31, DM3, DM4, A31. Dust, noise, lighting & air pollution affecting vegetation during operation. Maldon Road, Birch. Parkstone Quay. Recreational disturbance where restoration includes public access. Impacts could be	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
		diverted & deflected through various measures. No Preferred Sites currently include recreation as part of their restoration schemes. However, restoration schemes are not yet known for those sites that have not come forward.	
Water quantity and quality	Colne Estuary SPA and Ramsar; Essex Estuaries SAC; Stour and Orwell SPA and Ramsar	S5, S6, S8, S9, P1, DM1, DM3, DM4, P1, P2, A31, B1. Via surface water, ground water. Via water courses, possibly over a relatively long distance (more than 20km has been considered as over precautionary).	<p>Water Quantity No. Water quantity was scoped out earlier in the HRA (<i>please refer to section identifying potential effects to a Habitats Site from the Minerals Local Plan and Use of Impact Pathways</i>)</p> <p>Water Quality Yes. Without mitigation water quality cannot be ruled out as a potential LSE. Need to progress to AA.</p>

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
Air Quality	Colne Estuary SPA and Ramsar Epping Forest SAC; Hamford Water SPA, SAC and Ramsar; Essex Estuaries SAC; Stour and Orwell SPA and Ramsar; Blackwater Estuary SPA and Ramsar.	S6, S8, S9, S11, S12, P1, DM1, DM3, DM4. Air pollution affecting vegetation during operation. 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. Processing of materials and secondary processes	Yes, without sufficient data it is not possible to rule out LSE. Needs to progress to AA.

HRA Screening Conclusion and Recommendations

3.82. This report provides a revision to the Habitats Regulations Assessment prepared by URS -entitled *Essex County Council Replacement Minerals Local Plan: Pre Submission Draft -Habitats Regulations Assessment, November 2012.*

3.83. This HRA (2021) is required to support proposed amendments to the MLP, which has been reviewed as part of the requirement to review development plans within five years of adoption.

3.84. The range of potential impacts on seven Habitats Sites has been considered and assessed. In line with the recent Court judgement (CJEU People Over Wind v Coillte Teoranta C-323/17), mitigation measures can no 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.

3.85. Natural England recommended (7th January 2021) that if the HRA work undertaken identified air quality as a likely significant effect, the usual assessment steps in the guidance should be followed. Currently the M25 section closest to Epping Forest SAC is under particular scrutiny due to the uplift anticipated linked to the Lower Thames Crossing NSIP, and so the in-combination assessment will be important.

3.86. The following elements of the Essex Minerals Local Plan updated 2021 have been screened in and will need to be taken to the next stage of the Habitats Regulations Assessment, i.e. Appropriate Assessment.

3.87. Policies (including Preferred Sites) screened in for further assessment are:

- 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 transshipment 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

3.88. Habitats Sites on which there is the potential for Likely Significant Effect are as follows:

- Abberton Reservoir SPA and Ramsar
- Blackwater Estuary SPA and Ramsar Colne Estuary SPA and Ramsar
- Colne Estuary SPA and Ramsar
- Epping Forest SAC

- Essex Estuaries SAC
- Hamford Water SPA, SAC and Ramsar
- Stour and Orwell SPA and Ramsar

3.89. The HRA screening has concluded that it is not possible to rule out the potential for Likely Significant Effects without further assessment and possibly the need for mitigation for the policies aforementioned. Potential pollution pathways are disturbance, water quality and air quality.

3.90. An Appropriate Assessment is therefore required under the Conservation of Habitats and Species Regulations 2017 (as amended). The updates to the five-year review of the Minerals Local Plan 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.

4. Appropriate Assessment (Stage 2)- Methodology

Introducing Appropriate Assessment and Considering Adverse Effects On Integrity

- 4.1. Essex County Council, as the competent authority, needs to undertake further assessment as various policies have been screened in as having the potential to cause Likely Significant Effects on any Habitats Sites, without taking into account appropriate mitigation measures. This process was not undertaken for the Essex Minerals Plan July 2014 as all elements were screened out.
- 4.2. This should involve an 'Appropriate Assessment' of the implications of the Essex Minerals Plan July 2014 (as amended 2021), and any proposed modifications either alone or in combination with other plans or projects, in order to establish whether there may be an Adverse Effect on the Integrity of any Habitats Sites in view of their Conservation Objectives. This stage is to undertake objective scientific assessment of the implications of the Minerals Local Plan on the Qualifying Features of the listed Habitats Sites using the best scientific knowledge in the field. It should apply the best available techniques and methods to assess the extent of the effects of the Minerals Local Plan on the integrity of the Habitats Sites. The description of the site's integrity and the impact assessment should be based on the best possible indicators specific to the Habitats Sites' qualifying features, which can also be useful in monitoring the impact of the Minerals Local Plan's implementation.
- 4.3. The Appropriate Assessment should assess all aspects of the Minerals Local Plan which can by themselves, or in combination with other plans and projects, affect the Conservation Objectives of one or more Habitats Site. The assessment must consider the implications for each qualifying feature of each potentially affected Habitats Site. The focus of the appropriate assessment is therefore on the species and / or the habitats for which the Habitats Site is designated.
- 4.4. The best scientific knowledge should be used when carrying out the Appropriate Assessment in order to enable the competent authority to conclude with certainty that there will be no *Adverse Effect on the Integrity* of any Habitats Site⁹.
- 4.5. It is important that the Appropriate Assessment provides a better understanding of potential effects and can therefore assist in the identification of mitigation measures where possible to avoid, reduce or cancel significant effects on Habitats Sites which could be applied when undertaking the 'integrity test'. All mitigation measures built into the Minerals Local Plan can be taken into account. The Appropriate Assessment is an iterative process, re-assessing changes and new or different mitigation measures before making its final conclusion. It must be clear which mitigation measures are being relied upon in order to meet the integrity test.
- 4.6. The integrity test must apply the precautionary principle. Plan assessments are less precise than project assessments, and so it is important for the assessment process to eliminate the prospect of adverse effects integrity insofar as it is possible, given the level of specificity of this Minerals Local Plan.

⁹ Waddenzee ruling (C-127/02 paragraphs 52-54, 59)

Court Judgements and their consideration in this Report

CJEU People Over Wind v Coillte Teoranta C-323/17

- 4.7. As previously mentioned, 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 screening assessment to decide whether a plan or project is likely to result in significant effects on a Habitats Site. This HRA Appropriate Assessment therefore considers mitigation measures for the assessment of Likely Significant Effects resulting from the MLP.
- 4.8. In accordance with this Judgement, all mitigation measures already built into the Minerals Local Plan can now be taken into account for the Appropriate Assessment.

CJEU Holohan C- 461/17

- 4.9. Court rulings include CJEU Holohan C-461/17 (7 November 2018) which 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.
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.

- 4.10. It is therefore necessary to consider species likely to be present in any of the Habitats Sites, for which that site has not been listed – e.g. birds which are designated features of the underpinning SSSI - 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. Those species found outside the Habitats Site boundary are covered by the consideration of impacts on functionally-linked land.

CJEU Joined Cases C-293/17 and C-294/17 Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu

- 4.11. These Dutch cases concerned authorisations for schemes for agricultural activities in Habitats Sites which cause nitrogen deposition and where levels already exceeded the critical load. These

are not directly connected with or necessary for the management of a Habitats Site and “highlights” of the ruling include:

1. *Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that the grazing of cattle and the application of fertilisers on the surface of land or below its surface in the vicinity of Natura 2000 sites may be classified as a ‘project’ within the meaning of that provision, even if those activities, in so far as they are not a physical intervention in the natural surroundings, do not constitute a ‘project’ within the meaning of Article 1(2)(a) of Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.*
2. *Article 6(3) of Directive 92/43 must be interpreted as meaning that a recurring activity, such as the application of fertilisers on the surface of land or below its surface, authorised under national law before the entry into force of that directive, may be regarded as one and the same project for the purposes of that provision, exempted from a new authorisation procedure, in so far as it constitutes a single operation characterised by a common purpose, continuity and, inter alia, the location and the conditions in which it is carried out being the same. If a single project was authorised before the system of protection laid down by that provision became applicable to the site in question, the carrying out of that project may nevertheless fall within the scope of Article 6(2) of that directive.*
- ...
6. *Article 6(3) of Directive 92/43 must be interpreted as meaning that an ‘appropriate assessment’ within the meaning of that provision may not take into account the existence of ‘conservation measures’ within the meaning of paragraph 1 of that article, ‘preventive measures’ within the meaning of paragraph 2 of that article, measures specifically adopted for a programme such as that at issue in the main proceedings or ‘autonomous’ measures, in so far as those measures are not part of that programme, if the expected benefits of those measures are not certain at the time of that assessment.*
7. *Article 6(3) of Directive 92/43 must be interpreted as meaning that measures introduced by national legislation, such as that at issue in the main proceedings, including procedures for the surveillance and monitoring of farms whose activities cause nitrogen deposition and the possibility of imposing penalties, up to and including the closure of those farms, are sufficient for the purposes of complying.*

4.12. This Court ruling is relevant to projects which trigger appropriate assessment before any consents are issued so should be considered when identifying other plans and projects for an in-combination assessment. It still applies to plans and projects now the UK has left the EU.

Approach and Methodology of the Appropriate Assessment

4.13. In order to fulfil the above requirements and taking into account case law, this Appropriate Assessment will therefore use the following process, and will be structured using the potential impact pathways to Habitats Sites.

Policies / Allocations and Habitats Sites within Scope

4.14. The potential Likely Significant Effects considered at Screening Stage are now carried forward for consideration at Appropriate Assessment. The policies and their potential to have adverse effects on any Habitats Site through a variety of impact pathways are now considered in more detail, for example habitat loss or deterioration, disturbance, direct and indirect effects; extent of the effects (habitat area, species numbers or areas of occurrence); importance and magnitude (e.g. considering the affected area or population in relation to the total area and population size).

4.15. The policies and Preferred Sites listed in Tables 7 and 8 were identified at Screening Stage as having the potential to cause a Likely Significant Effect. Table 10 lists the Habitats Sites identified at Screening Stage and shows the potential impact pathways and potential Likely Significant Effects identified.

4.16. Key vulnerabilities of each Habitats Site are set out in Appendix 3 using the relevant Site Improvement Plans. Site Improvement Plans have been developed for each Habitats Site in England as part of the 'Improvement Programme for England's Natura 2000 sites (IPENS)' but they do not include Ramsar sites. Each Site Improvement Plan provides a high-level overview of the issues (both current and predicted) affecting the condition of the Habitats Site (referred to as Natura 2000) features on the site(s) and outlines the priority measures required to improve the condition of the features. These can be found at: <http://publications.naturalengland.org.uk/category/5458594975711232>.

4.17. Additional information is also provided for each site on the Designated Sites website and this information has been interrogated.

Use of Mitigation Measures

4.18. All mitigation measures already built into the MLP can be taken into account for the Appropriate Assessment. At this stage other policies of the MLP can be considered in order to mitigate some of the potential Likely Significant Effects which have been identified. This stage is an iterative process as avoidance and reduction measures can be incorporated in order to be able to avoid the potential impacts identified in the Appropriate Assessment or reduce them to a level where they will no longer adversely affect the site's integrity.

4.19. Where there may still be adverse effects on the ecological integrity of Habitats Sites, in view of the Site's conservation objectives, additional mitigation measures may also need to be proposed. Generic mitigation is used where possible. This should help to address water quality, air pollution, noise, and other forms of disturbance. Construction Environment (Ecological) Management Plans (CEMPs) – often a condition of consent - can help to direct seasonal working, damping down of dust and measures to alleviate noise pollution.

- 4.20. Reduction in the scale of the potentially damaging provision by mitigation measures may reduce the potential effects on a Habitats Site, but they may still require the residual effects to be assessed in combination. This may or may not allow the MLP to pass the integrity test. All the necessary measures need to be incorporated into the MLP before the integrity test can be applied.
- 4.21. Monitoring will be required as part of the MLP where residual effects are identified.

Applying the Integrity Test

- 4.22. Following the Appropriate Assessment and the consideration of all mitigation measures, the competent authority needs to make a judgement on whether any of the policies will have an *Adverse Effect on Integrity* on any Habitats Site either alone with other plans or projects. This test incorporates the precautionary principle. This Assessment is set out in Chapter 5.

In Combination Effects with other Plans and Projects

- 4.23. The Appropriate Assessment also includes a comprehensive identification of all the potential effects of the Minerals Local Plan likely to be significant, taking into account the combination of the effects of the Minerals Local Plan with those of other plans or projects.
- 4.24. Residual effects need to be considered in combination with other plans and projects. Other potential plans and projects include neighbouring minerals plans; the Essex Waste Plan; Essex Local Transport Plan and district-level plans which provide for development in Essex, as well as Nationally Strategic Infrastructure Projects (NSIPs). A full list is provided in the in combination section below.

Embedding Mitigation into the Local Plan

- 4.25. Essex County Council, as the competent authority, should consider the manner in which the MLP is to be implemented and any mitigation measures which could be relied upon when deciding whether it would have an Adverse Effect on Integrity, including when and how they can be embedded into the Minerals Local Plan. It needs to ensure that mitigation is embedded into the MLP through amendments to policies where necessary. The DTA Handbook advises that it is not sufficient to rely on a general policy aimed at protecting Habitats Sites. Instead, explicit caveats need to be included where there may be conflicts or contradictions between a general policy to protect Habitats Sites from development and another policy. Any resolution should ensure that it can be ascertained that there would be no adverse effect on site integrity.

Re-applying the Integrity Test

- 4.26. After mitigation has been embedded, the integrity test should be re-applied as part of the iterative process to check if the proposed mitigation is now sufficient to avoid adverse effects on integrity. At the plan level this can include changes to text. Where there may still be adverse effects on the ecological integrity of Habitats Sites, in view of their conservation objectives, additional mitigation measures may need to be considered.

4.27. Chapter 5 considers each potential impact pathway against the policies screened in, proposes how they might be mitigated and provides an assessment as to whether embedded mitigation is sufficient to avoid Adverse Effect on Integrity.

Monitoring

4.28. Once advice has been obtained from Natural England, recommendations for any monitoring, e.g. early warning or validation monitoring, may be proposed for some potential impacts. This may enable a proposal to be facilitated and may allow the plan-making body to monitor the effectiveness of mitigation measures and perhaps to tailor them in the future. Early warning monitoring is generally the most useful type as it can allow a plan to be adopted where the monitoring is part of a suite of appropriate follow-up measures.

Consulting Natural England

4.29. 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.

5. Undertaking the Appropriate Assessment (Stage 2)

Policies / Allocations and Habitats Sites within Scope

5.1. As identified at the HRA Screening stage above (Chapter 3), the Habitats Sites which are predicted to have Likely Significant Effect (without considering mitigation) are:

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

5.2. These are, therefore, the sites that are most likely to be directly damaged or fragmented as a result of Minerals Local Plan policies.

5.3. The policies (including Preferred Sites) screened in for further assessment are:

- 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 transshipment 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

5.4. Potential effects listed for the above Habitats Sites could not be ruled out from being significant and the following pathways require further consideration:

- Disturbance
- Water quality
- Air quality (in combination)

Consulting Natural England/ comments from other Stakeholders

5.5. As part of the Duty to Cooperate a number of stakeholders were consulted in autumn 2020 on proposed amendments to the MLP. Natural England was consulted as part of this process. It provided the following interim advice on 7th January 2021:

- 5.6. *“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.*
- 5.7. *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.”*

Disturbance

- 5.8. This section includes an increase of any type of relevant disturbance, for example increased noise, dust or light arising from preparing a mineral site for extraction, processing plants, construction work, use of heavy vehicles and loud machinery.
- 5.9. Increase of any type of disturbance from the quarrying processes and after uses, such as those arising from noise, light, dust and vibration, 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.
- 5.10. Disturbance concerns species, rather than habitats e.g. wetland birds. 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.
- 5.11. When birds are disturbed, they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the ‘condition’ and ultimately survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds. If a breeding bird is displaced from the nest for a long period, the eggs are likely to cool and become more vulnerable to predators.
- 5.12. A precautionary distance of 2 km from a Preferred Site was used for the purpose of the Screening assessment.
- 5.13. Wetland birds are vulnerable to disturbance. Birds can become habituated to some kinds of disturbance, usually where the source of disturbance occurs in a predictable way.
- 5.14. Development in close proximity to Habitats Sites would be most likely to cause a disturbance. There are no Preferred Sites screened in that would be situated adjacent to any Habitats Site.

However, the likelihood of disturbance will also vary according to the location, degree of openness and the species concerned.

5.15. Quarries can be restored for **recreational use (see Policy S12)** and this can create increased pressure on the qualifying features of Habitats Sites with bird interest and / or associated habitats. Recreation has been screened out with respect to Preferred Sites as none are in close enough proximity to any Habitats Sites. However, it must also be ensured that any future unknown sites coming forward, will not cause any adverse effect on site integrity.

Policies and Preferred Sites Screened in for Potential impacts to Disturbance

5.16. Following the screening exercises carried out at Stage 1 (see Table 10), the policies and allocations below are assessed as having the potential to result in likely significant effects, without mitigation, from the Plan alone, on the following receptors as a result of disturbance.

- 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 transshipment sites and secondary processing facilities (Transshipment site: Parkeston Quay)
- P1: Preferred Sites for Sand and Gravel Extraction
- S12: Mineral Site Restoration and After-Use
- DM1: Development Management Criteria
- DM3: Primary Processing Plant
- DM4: Secondary Processing Plant
- A31: Maldon Road, Birch

5.17. At screening stage, a number of policies and Preferred Sites were considered likely to cause disturbance to Abberton Reservoir SPA and Ramsar site and the Stour and Orwell SPA and Ramsar site due to the close proximity of these Habitats Sites. The policies were screened in where more information was required, or they might need mitigation or where there was lack of certainty. Those Habitats Sites assessed as having the potential to experience impacts in relation to disturbance are both designated at least partly for their wetland bird interest.

5.18. The following section sets out where the HRA has found that there are potential issues in relation to Disturbance.

Table 11: Habitats Sites which might be affected by disturbance issues resulting from the MLP

MLP Policy and Allocations within Scope for Issues relating to Disturbance	Potential Impacts Related to Disturbance		
	Habitats Sites in Scope		Potential Impacts to Habitats Sites, depending on Location of Proposals
	Abberton Reservoir SPA and Ramsar	Stour and Orwell SPA and Ramsar	
S5: Creating a Network of Aggregate Recycling Facilities	X	X	✓
S6: Provision for sand and gravel extraction	X	X	✓

S8: Safeguarding mineral resources and mineral reserves	X	X	✓
S9: Safeguarding mineral transshipment sites and secondary processing facilities	X	✓	✓
S12: Mineral Site Restoration and After-Use	✓	X	✓
P1: Preferred Sites for Sand and Gravel Extraction	X	X	✓
DM1: Development Management Criteria	X	X	✓
DM3: Primary Processing Plant	X	X	✓
DM4: Secondary Processing Plant	X	X	✓
A31: Maldon Road, Birch	✓	X	X

Habitats Sites within Scope:

5.19. At the Screening stage, the following Habitats Sites were listed as having the potential for likely significant effects as a result of disturbance, without mitigation, from the Plan alone:

- Abberton Reservoir SPA and Ramsar
- Stour and Orwell SPA and Ramsar

5.20. These sites are both designated at least partly for their wetland bird interest.

5.21. At screening stage, a number of policies and Preferred Sites were considered likely to cause disturbance to Abberton Reservoir SPA and Ramsar site and Stour and Orwell SPA and Ramsar site due to the close proximity of these Habitats Sites.

5.22. Preferred Site A31 Maldon Road, Birch is less than 2.5km from Abberton Reservoir SPA and Ramsar site.

Abberton Reservoir SPA and Ramsar

5.23. Abberton Reservoir is a large storage reservoir built in a long shallow valley. It is the largest freshwater body in Essex and is one of the most important reservoirs in Britain for wildfowl. It is less than 8 km from the coast and its primary role is as a roost for the local estuarine wildfowl population. The qualifying features for Abberton Reservoir SPA and Ramsar site are:

- Breeding: Great Cormorant
- Non-breeding: Great Crested Grebe, Eurasian Wigeon, Mute Swan, Gadwall, Eurasian Teal, Northern Shoveler, Common Pochard, Tufted Duck, Common Goldeneye, Common Coot.

- Waterbird assemblage.
- Species with peak counts in spring/autumn: Gadwall and Northern Shoveler.
- Species with peak counts in winter: Eurasian Widgeon
- Species with peak counts in spring/autumn: Mute Swan, Common Pochard

5.24. Key vulnerabilities listed in the SIP are air quality; water quantity/quality and management causing direct or indirect impacts which may affect the distribution, abundance and availability of prey and so may adversely affect the population.

5.25. One of the qualifying features listed on the citation for Abberton Reservoir SPA is breeding cormorant. It qualifies by “regularly supporting a nationally important breeding population of cormorant (360 pairs, 5% of the British breeding population). This colony is unusual in Great Britain because the birds are nesting in trees inland, rather than on coastal cliff ledges or rocky islets.”

5.26. Natural England’s Supplementary Advice on conserving and restoring site features for Abberton Reservoir SPA provides the following for breeding cormorant:

“Restrict predation and disturbance caused by native and non-native predators. This will ensure that breeding productivity (number of chicks per pair) and survival are sustained at rates that maintain or restore the abundance of the feature. Impacts to breeding productivity can result directly from predation of eggs, chicks, juveniles and adults, and also from significant disturbance. The presence of predators can influence bird behaviours, such as abandonment of nest sites or reduction of effective feeding. Where evidence suggests predator management is required, measures can include their exclusion through fencing and scaring or by direct control. Any such measures must consider the legal protection of some predators, as well as the likely effects of such control on other qualifying features.

At Abberton Reservoir, a decline in cormorant breeding success in 1997 was considered to be due to low water levels that allowed brown rats to climb some trees and eat the young, and foxes to patrol under the trees and continually disturb sitting adults (Wood 2007). Ensuring that water levels in the central section are kept sufficiently high during the breeding season to prevent a recurrence is likely to be the only predator control measure needed unless conditions change.”

Stour and Orwell SPA and Ramsar

5.27. The Stour and Orwell SPA and Ramsar site contains two estuaries that are adjacent but combine near the mouth as they join the North Sea. They contain mudflats, saltmarsh and several freshwater pools and grazing marshes.

5.28. Breeding avocet feed upon the intertidal mudflats and use the grazing marshes to nest during the summer.

5.29. The SPA also supports important numbers of overwintering waterbirds, which also use the mudflats extensively for feeding. The saltmarsh and grazing marsh provide important roosting sites, whilst some birds feed and roost on the surrounding arable land. The SPA supports a large and diverse waterbird assemblage, including dark-bellied brent goose (*Branta bernicla bernicla*), ringed plover (*Charadrius hiaticula*), grey plover (*Pluvialis squatarola*), shelduck (*Tadorna tadorna*), cormorant (*Phalacrocorax carbo*), great-crested grebe (*Podiceps cristatus*), curlew (*Numenius arquata*), widgeon (*Anas penelope*), pintail (*Anas acuta*), goldeneye (*Bucephala*

clangula), gadwall (*Anas strepera*) oystercatcher (*Haematopus ostralegus*), lapwing (*Vanellus vanellus*), knot (*Calidris canutus islandica*), dunlin (*Calidris alpina alpina*), black-tailed godwit (*Limosa limosa islandica*), redshank (*Tringa totanus*) and turnstone (*Arenaria interpres*).

5.30. While birds can become habituated to some kinds of disturbance, ports have been shown to disturb birds; “*individual-based models have been used to predict the effect of a wide range of disturbance sources, from localized disturbance caused by people walking on mudflats (e.g. recreation and shell fishing) to larger disturbances from industrial developments (e.g. ports and windfarms). Although differing in scale, these disturbances have similar effects on the birds. They exclude birds from areas which would otherwise be used for feeding or roosting, increase the energy demands of birds by causing them to take flight and reduce the amount of time they have to feed. Disturbance may also decrease the efficiency with which birds feed or increase the metabolic rate of birds before they take flight, factors which could potentially be incorporated into individual-based models in the future.*”¹⁰.

Assessment of Policies and Preferred Sites:

Policy S5: Creating a Network of Aggregate Recycling Facilities

- 5.31. Policy S5 was screened in because it was not possible to conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring adequate mitigation is in place.
- 5.32. The policy safeguards all existing aggregate recycling facilities in the county and sets out positive policy criteria to enable developers to bring forward proposals for new aggregate recycling sites in appropriate locations. The supporting text sets out parameters for the assessment of proposals for new facilities, including guidance on the types of locations that would be suitable. The majority, but not all, of these temporary sites are located within existing mineral workings or waste sites.
- 5.33. The distribution of existing aggregate recycling facilities in Essex is shown on Map 5 in the MLP. The MLP advises that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. There are no locations for new sites. The Policy sets out parameters for when new sites might be acceptable, but without specific sites identified it is not possible to fully to assess whether there could be any impacts arising from disturbance.
- 5.34. 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.
- 5.35. The supporting text in paragraph 3.75 states that “proposals for new aggregate recycling sites should not be located where they would cause unacceptable impacts or harm to neighbouring land uses by virtue of noise, vibration, dust, light pollution, or heavy road traffic”. This paragraph

¹⁰ IBIS International Journal of Science: Predicting the effect of disturbance on coastal birds by 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>
Can be found at: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1474-919X.2007.00649.x>

also recommends that proposals would need to be well located in relation to the main road network.

Mitigation

5.36. Any new aggregate recycling sites must be able to demonstrate that they can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ.

5.37. Given the parameters in the Plan for Policy S5 relating to appropriate locations listed in paragraph 3.73, and the fact that aggregate recycling facilities should be on the main road network, the proposed additional text for S5 should be sufficient to avoid adverse effects on site integrity.

S6: Provision for sand and gravel extraction

5.38. Policy S6 was screened out in the 2012 HRA because it considered that, “the main aspect of this policy is the allocation of Preferred Sites. ... These have already been assessed in the preceding table and a conclusion of ‘no likely significant effect’ has been drawn. The policy does not seek to promote any other sites beyond the Preferred Sites”.

5.39. Policy S6 was screened in to this HRA 2021 because it also enables sites to come forward at non-Preferred Sites if certain criteria are met. It was therefore not possible to conclude Likely Significant Effect without more information about the location of the sites, or by ensuring adequate mitigation is in place.

5.40. It is noted in Chapter 2 that the supporting information for S6, in paragraph 3.105, states that “*other proposals for sand and gravel extraction at locations situated outside of the areas identified for future working will normally be resisted by the Mineral Planning Authority (MPA) unless there is an ‘over-riding justification’ and/ or ‘over-riding benefit’ as set out in Policy S6*”. Examples include agricultural irrigation reservoirs, borrow pits (e.g. for a road scheme) or Prior extraction to prevent mineral sterilisation where a significant development is taking place. This Policy enables the MLP to consider unforeseen or unknown circumstances and therefore it is not possible to know where these might be located over the life of the MLP. Consequently, it is not possible to be able to identify whether adverse effects may arise relating to disturbance.

5.41. Policy S6 allows for proposal mineral extraction outside of Preferred Sites providing that they “can demonstrate a) an overriding justification and/ or overriding benefit for the proposed extraction”.

5.42. However, Part c) of Policy S6 also requires any proposed mineral extraction outside of Preferred Sites to demonstrate that they would be “environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan”.

Mitigation

5.43. Any minerals site being proposed that is not a Preferred Site must be able to demonstrate that they can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA’s recommendations.

S8: Safeguarding mineral resources and mineral reserves

- 5.44. Policy S8 aims to create Mineral Safeguarding Areas (MSAs) to safeguard defined mineral types from sterilisation by other developments and encourages mineral extraction, thereby creating the potential for Likely Significant Effect.
- 5.45. S8 was screened out in the 2012 HRA because the “policy is concerned exclusively with safeguarding minerals reserves rather than promoting their extraction in particular locations. ...there is no presumption that resources defined will be worked. As such, it will not result in a likely significant effect on any European [i.e. Habitats] Sites”.
- 5.46. S8 was screened into this HRA 2021 because, without having the knowledge or certainty of specific locations, it was not possible to conclude that there would be no Likely Significant Effect. Any new sites may require project-level HRA if within an IRZ.
- 5.47. Minerals are a finite resource and can only be extracted from where they are naturally located (for the distribution across Essex, please see the Policies Map in the MLP). However, planning applications being considered under Policy S8 will be driven by other developments. A newly proposed paragraph in the supporting text of policy S8 of the emerging MLP proposes that the minerals extraction should “be viewed in the context of the development as a whole, not as a standalone commercial mineral extraction activity”. As a result, specific site locations are not necessarily known (though many will be driven by the districts’ local plans) and are not included in this MLP.

Mitigation

- 5.48. Any minerals site proposed on safeguarded land arising from other surface development and being considered under Policy S8, must be able to demonstrate that it can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA’s recommendations.

Policy S9: Safeguarding mineral transshipment sites and secondary processing facilities

- 5.49. Policy S9 aims to safeguard transshipment sites and secondary processing facilities.
- 5.50. The MLP advises that existing rail depots and marine wharves are of vital strategic importance for the future supply of aggregates and their safeguarding needs to be continued to prevent their redevelopment for other land-uses.
- 5.51. No new mineral transshipment sites are proposed by MLP. However, it states in paragraph 3.156 that “the previously adopted Essex Minerals Local Plan (1996) identified the potential for a new marine wharf facility at Parkeston Quay East, Harwich Port Authority. This site is situated adjacent to the Stour Estuary and close (500 metres or less) to the Stour Estuary SPA and Ramsar site boundary. To date, a proposal has not materialised. However, the MLP proposes to continue to safeguard this area from non-mineral development during the plan-period to ensure that this potential remains available as it is understood that this is currently being actively explored.
- 5.52. In addition, “there are other small wharves which tranship a range of products including minerals, or which have the potential to tranship minerals, which will need to be considered and safeguarded by the respective LPAs.”

- 5.53. Policy S9 was screened out in the 2012 HRA on the basis of this and that the policy S9 is concerned only with safeguarding the site against conflicting development, rather than actively promoting it. It is screened in for this HRA as it could not be concluded that there would be no Likely Significant Effect without further consideration and possibly mitigation.
- 5.54. The 2012 HRA advises that “Parkeston Quay is an existing developed quay/wharf immediately adjacent to mudflats that constitute part of the Stour & Orwell Estuaries SPA/Ramsar site. However, the wharf itself is entirely land-based and is immediately adjacent to Harwich International Port. As such the area is already very busy with both land and shipping traffic.”
- 5.55. The Site Improvement Plan for the Stour Estuary SPA raises two issues in relation to the ports and their impact on the SPA and Ramsar site. The first of these issues are in relation to invasive species and the second is in relation to dredging. These are issues with use of shipping per se, not the actual transshipment site itself and so are not considered relevant here.
- 5.56. Concerns in relation to human disturbance are raised as an issue within the SIP from a range of land and water-based activities, including boating and water sports; walking; bait-digging; fishing; wildfowling; and military overflight training, but not in relation to ports.
- 5.57. This HRA recognises that, if the Parkeston Quay transshipment site comes forward as a planning application, it would be situated within the existing land-based area of Harwich International Port and not immediately adjacent to the SPA and Ramsar site. As such, it would be surrounded by other port infrastructure and any impacts arising from construction or use could be mitigated. It is likely that there would be a certain amount of habituation to the presence of the port by the birds using the area. Disturbance from the port is not raised as a specific issue within the Stour Estuary SPA SIP.
- 5.58. There are no other specific impacts that can be predicted to arise from potential new small wharves.

Mitigation

- 5.59. Any proposals to create a transshipment site at Parkeston Quay at Harwich Port will require a project-level Habitats Regulation Assessment.

S12: Mineral Site Restoration and After-Use and Preferred Site A31 Maldon Road, Birch

- 5.60. 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 MLP. Recreational use of sites can cause disturbance, particularly to birds. Recreation as an after use was screened out with respect to Preferred Sites as none are in close enough proximity to Habitats Sites. However, recreation as an after-use could not be screened out for any non-Preferred sites which might come forward during the life of the MLP as their locations are as yet unknown, and neither is their after-use.
- 5.61. The use of suitable restoration of minerals sites is an important consideration for operators and landowners. One of the recommendations of the HRA 2012 related to restricting the waste streams for restoration of two specific quarries due to their proximity to Habitats Sites, one of

which is A31 Maldon Road, Birch due to its proximity to Abberton Reservoir SPA and Ramsar site.

- 5.62. As stated above, one of the qualifying features listed on the citation for Abberton Reservoir SPA is breeding cormorant. Preferred Site A31 Maldon Road, Birch is less than 2.5km from Abberton Reservoir SPA and Ramsar site.
- 5.63. The breeding cormorants at Abberton Reservoir could be predated on by crows and gulls. The 2012 HRA advised that, “Putrescible landfill can (through attracting gulls, crows etc) have an adverse predation effect on sites within 5km that are designated for nesting birds (particularly ground nesting species).”
- 5.64. Therefore, in order to prevent attracting gulls and crows to Abberton Reservoir, the 2012 HRA recommended that Policy S12 prevented putrescible waste being used for landfilling, should waste be required for restoration purposes at Maldon Road, Birch (and for A20 Sunnymead, Alresford which has been screened out). These recommendations of the 2012 HRA are still considered relevant for inclusion within the MLP.
- 5.65. Preferred Site A31 Maldon Road, Birch would be an extension to the existing Birch Quarry and is a ‘Flagship Site’ under Policy S12 of the MLP, requiring priority habitats to be created using low level restoration. The ¹¹Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) (SPG) proposes that it is restored to Open Mosaic Habitat, Reedbeds, Open Water and Woodland. Further information in relation to restoration to the priority habitats are set out in the SPG.
- 5.66. No scheme has yet been submitted for A31 Maldon Road, Birch, although the operator has indicated that it hopes to submit one during the life of the MLP. No imported waste is proposed for this Site in either the MLP or ¹²Essex and Southend-on-Sea Waste Local Plan 2017 (WLP); it is not an Allocated Site in the WLP.
- 5.67. Consequently, it is unknown, but possible, that waste could be imported as a result of the MLP changes in 2021 but it is not anticipated that the restoration scheme would need to include putrescible waste. Prevention of putrescible waste at Site A31 Maldon Rd, Birch should be embedded within the MLP.

Mitigation

- 5.68. There should be no landfilling of putrescible waste at Preferred Site A31 Maldon Road, Birch, or any site within an Impact Risk Zone (IRZ).
- 5.69. The use of suitable restoration of minerals sites is an important consideration for operators and landowners and it should be explicit that the restoration process or final outcome must not cause an adverse effect on integrity, for example through the process of importing waste to raise site levels, or by recreational use. In order to prevent any unknown adverse effects through site restoration of any future site Policy S12 should explicitly state that there should be no adverse effects on site integrity, *either alone or in combination with other plans and projects*.

¹¹ The Mineral Site Restoration for Biodiversity Supplementary Planning Guidance (2016) can be found at: <https://www.essex.gov.uk/minerals-waste-planning-policy/minerals-local-plan>

¹² The Essex Waste Local Plan can be found at: <https://www.essex.gov.uk/minerals-waste-planning-policy/waste-local-plan>

5.70. The following underlined supporting text in paragraph 3.205 for Policy S12 of the MLP should be included. This has been agreed with the Minerals Planning Authority.

"Restoration proposals for sites situated within an Impact Risk Zone (IRZ) for a Habitats Site 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 Site alone or in combination, through a project-level HRA."

DM1: Development Management Criteria

5.71. Policy DM1 was screened out in the 2012 HRA but screened in for this HRA as it could not be concluded that there would be no Likely Significant Effect without further consideration and possibly mitigation.

5.72. 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 Likely Significant Effect.

5.73. The need to avoid adverse effects on the integrity of Habitats Sites is included within the supporting text of DM1. However, it should be explicit within a policy of the MLP.

Mitigation

5.74. The following supporting text should be amended in paragraph 5.15:

"... enable the carrying of material by water and rail wherever possible. The Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites."

5.75. In addition, Policy DM1 should ensure that anything permitted through the MLP will deliver good practices to avoid disturbance issues on any known or windfall site. Any other future proposals requiring a decision under the MLP, which fall within an IRZ should require a project-level HRA through Policy DM1.

5.76. Conditions can be used to avoid or control the potential impacts of development, e.g. Construction Environment Management Plans (CEMPs) during the construction period. Other conditions can also be used over the whole of the mineral site operation, for example to control noise. Thus, conditions can address seasonal working, damping down of dust, screening and measures to alleviate noise pollution and should help to address noise, light and other forms of disturbance. These conditions are a standard part of a development management planner's toolkit. They can be a part of any planning permission and all such opportunities are provided for through Policy DM2: Planning Conditions and Legal Agreements (which was screened out); i.e.: *"When granting planning permission for minerals developments, the Mineral Planning Authority will impose conditions and/or require legal agreements to mitigate and control the effects of the development and to enhance the environment."*

DM3: Primary Processing Plant and DM4: Secondary Processing Plant

- 5.77. DM3 and DM4 were screened out by the 2012 HRA on the grounds that they do not promote or seek to deliver development.
- 5.78. Policy DM3 requires that minerals extraction will only be permitted where the primary processing plant will not have an unacceptable impact on the 'surrounding environment'.
- 5.79. DM4 requires that "Proposals for the secondary processing and/ or treatment of minerals will only be permitted where it can be demonstrated that there would be no unacceptable impact upon... the local environment".
- 5.80. However, they do not contain a requirement for project level HRA or avoidance of Likely Significant Effect on Habitats Sites. Therefore, this HRA screened in DM3 and DM4 as it could not conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring that adequate mitigation is in place.
- 5.81. Secondary processing plants are used for activities such as mortar or concrete batching, the manufacture of coated materials (asphalt), block/ tile/ brick making and other concrete products and are found on existing mineral, industrial and transshipment sites. They are deemed to be temporary so as not to delay restoration.
- 5.82. It is not known where any new primary or secondary plants might be located under these policies. Consequently, it is also not possible to be able to identify whether adverse effects could arise in relation to disturbance. Therefore, mitigation measures are required to ensure that there will be no AEOL.

Mitigation

- 5.83. Any new primary or secondary facilities should avoid causing adverse effect on site integrity. This will need to be demonstrated through a project-level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA's recommendations.

Applying the integrity test for impacts from disturbance

- 5.84. If the mitigation proposed above is embedded into the MLP it can be concluded that there will be no adverse effects on site integrity on the Stour and Orwell SPA and Ramsar site or the Abberton Reservoir SPA and Ramsar site.
- 5.85. It will also protect any Habitats Site from adverse effects on integrity arising from any other development whose nature, extent and location are not identified in this MLP.

Water Quality

- 5.86. This section includes an increase of any type of activity that results in reducing the water quality of Habitats Sites.
- 5.87. Water can be transported via surface water or ground water. Water courses can carry pollutants over a relatively long distance. Distances more than 20km is considered as over precautionary.

- 5.88. The quality of the water that feeds Habitats Sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts. At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- 5.89. Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication.
- 5.90. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen.
- 5.91. Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.
- 5.92. Most water supply within Essex is delivered by Essex and Suffolk Water (ESW), via the storage facilities at Abberton and Hanningfield reservoirs. Other water supply companies that operate in Essex are Anglian Water, whose area covers Braintree and Colchester districts and Veolia Water East, who supply Tendring district, mostly from groundwater underlying the Rivers Stour and Brett, with the remainder from the River Colne, via shared storage facilities with Anglian Water.
- 5.93. Anglian Water is responsible for wastewater and sewage treatment in the Essex region.
- 5.94. Anglian Water's Water Resources Management Plan¹³ (WRMP) sets out how it will manage the water supplies to meet current and future needs over a minimum of 25 years. Every five years it is reviewed; the current Plan, published in 2019, covers the period from 2020-2045. Options are being considered such as desalination plants, sharing water between water companies and extending/ creating reservoirs in the future to meet demand.
- 5.95. The HRA 2012 advises that Environment Agency Catchment Abstraction Management Strategies (CAMS) that define water availability relevant to Essex cover the following catchments:
- Roding, Beam and Ingrebourne
 - Combined Essex
 - Cam and Ely
- 5.96. The CAMS are split into smaller Water Resource Management Units (WRMUs), each of which may be defined as 'water available', 'no water available', 'over-licenced' or 'over abstracted.' Such designations can also be combined where appropriate to give an overall integrated rating. Within Essex, only three WRMUs have water available – these are the Upper Roach, Crouch and Mardyke rivers, the rivers Roding (lower), Beam and Ingrebourne and the chalk aquifer beneath the latter catchment.

¹³ This can be found at: <https://www.anglianwater.co.uk/about-us/our-strategies-and-plans/water-resources-management-plan/>

Policies and Preferred Sites Screened in for Potential Impacts to Water Quality

5.97. Following the screening exercises carried out at Stage 1 (see Table 10), the policies and allocations below are assessed as having the potential to result in likely significant effects, without mitigation, from the Plan alone, on the following receptors as a result of water quality.

- 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 transshipment sites and secondary processing facilities
- DM1: Development Management Criteria
- DM3: Primary Processing Plant
- DM4: Secondary Processing Plant
- P1: Preferred Sites for Sand and Gravel Extraction
- P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh)
- A31: Maldon Road, Birch
- B1: Slough Farm Ardleigh

5.98. At screening stage, a number of policies and Preferred Sites were considered to have the potential to cause water quality issues to the Colne Estuary SPA and Ramsar site, the Stour and Orwell SPA and Ramsar site or Essex Estuaries SAC due to the hydrological connectivity of these Habitats Sites. The policies were screened in where more information was required, or they might need mitigation or where there was lack of certainty. Those Habitats Sites were assessed as having the potential to experience impacts in relation to water quality.

5.99. The following section sets out where the HRA has found that there are potential issues in relation to water quality.

Table 12: Habitats Sites which might be Affected by Water Quality Issues Resulting from the MLP

MLP Policy and Allocations within Scope for Issues relating to Disturbance	Potential Impacts Related to Water Quality			
	Habitats Sites in Scope			Potential Impacts to Habitats Sites, depending on Location of Proposals
	Colne Estuary SPA and Ramsar	Essex Estuaries SAC	Stour and Orwell SPA and Ramsar	
S5: Creating a Network of Aggregate Recycling Facilities	X	X	X	✓
S6: Provision for sand and gravel extraction	X	X	X	✓
S8: Safeguarding mineral resources and mineral reserves	X	X	X	✓
S9: Safeguarding mineral transshipment	X	X	✓	✓

sites and secondary processing facilities				
P1: Preferred Sites for Sand and Gravel Extraction	✓	✓	X	X
P2: Preferred Site for Silica Sand Extraction (B1 Slough Farm, Ardleigh)	✓	✓	X	X
DM1: Development Management Criteria	X	X	X	✓
DM3: Primary Processing Plant	X	X	X	✓
DM4: Secondary Processing Plant	X	X	X	✓
A31: Maldon Road, Birch	✓	✓	X	X
B1: Slough Farm Ardleigh	✓	✓	X	X

Habitats Sites within Scope

5.100. At the HRA Screening stage, the following Habitats Sites were listed as having the potential for likely significant effects as a result of water quality, without mitigation, from the Plan alone:

- Colne Estuary SPA and Ramsar
- Essex Estuaries SAC
- Stour and Orwell SPA and Ramsar

5.101. All of the above Habitats Sites are sensitive to waterborne pollution, and thus it is likely to affect favourable condition.

Colne Estuary SPA and Ramsar

5.102. The estuary has a narrow intertidal zone predominantly composed of flats of fine silt with mudflat communities typical of south-eastern estuaries. The estuary is of international importance for wintering Brent Geese and Black-tailed Godwit and of national importance for breeding Little Terns and five other species of wintering waders and wildfowl. The variety of habitats which include mudflat, saltmarsh, grazing marsh, sand and shingle spits, disused gravel pits and reedbeds, support outstanding assemblages of invertebrates and plants.

- Breeding: Little Tern; Common Pochard; Ringed Plover
- Nonbreeding: Dark-bellied Brent Goose; Hen Harrier; Common Redshank
- Waterbird assemblage

Essex Estuaries SAC

5.103. The Mid-Essex Coast comprises an extensive complex of estuaries and intertidal sand and silt flats, including several islands, shingle and shell beaches and extensive areas of saltmarsh. The proposed SPA follows the boundaries of five SSSIs: the Colne Estuary, the Blackwater Estuary, Dengie, the River Crouch Marshes and Foulness

- Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats.
- Salicornia and other annuals colonizing mud and sand; Glasswort and other annuals colonising mud and sand
- *Spartina* swards (*Spartinion maritimae*); Cord-grass swards
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)

Stour and Orwell SPA and Ramsar

5.104. The Stour and Orwell SPA and Ramsar site contains two estuaries that are adjacent but combine near the mouth as they join the North Sea. They contain mudflats, saltmarsh and several freshwater pools and grazing marshes.

- Breeding avocet feed upon the intertidal mudflats and use the grazing marshes to nest during the summer.
- Important numbers of overwintering waterbirds, which also use the mudflats extensively for feeding. The saltmarsh and grazing marsh provide important roosting sites, whilst some birds feed and roost on the surrounding arable land.
- Large and diverse waterbird assemblage, including dark-bellied brent goose (*Branta bernicla bernicla*), ringed plover (*Charadrius hiaticula*), grey plover (*Pluvialis squatarola*), shelduck (*Tadorna tadorna*), cormorant (*Phalacrocorax carbo*), great-crested grebe (*Podiceps cristatus*), curlew (*Numenius arquata*), wigeon (*Anas penelope*), pintail (*Anas acuta*), goldeneye (*Bucephala clangula*), gadwall (*Anas strepera*) oystercatcher (*Haematopus ostralegus*), lapwing (*Vanellus vanellus*), knot (*Calidris canutus islandica*), dunlin (*Calidris alpina alpina*), black-tailed godwit (*Limosa limosa islandica*), redshank (*Tringa totanus*) and turnstone (*Arenaria interpres*).

Assessment of Policies and Preferred Sites

5.105. At screening stage, a number of policies and Preferred Sites were considered as having the potential to cause water quality issues to the above Habitats Sites due to their hydrological connectivity.

5.106. There are no Preferred Sites near to any Habitats Sites scoped in for further assessment. Nevertheless, as described earlier, watercourses can provide a viable connection / pathway over a relatively long distance. More than 20km has been considered as over precautionary, based upon advice from Natural England in relation to other HRAs.

5.107. Map 2 demonstrates the spatial relationship between the main water courses, Habitats Sites and Preferred Sites screened in. It can be found in the Screening section, in Chapter 3.

S5: Creating a Network of Aggregate Recycling Facilities

5.108. Policy S5 was screened in because it was not possible to conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring adequate mitigation is in place. This is discussed in the disturbance section above and is considered in this section due to the potential for it to adversely affect water quality.

5.109. There are no locations proposed for new sites, but the Policy allows for new sites to come forward and sets out parameters for when new sites might be acceptable. Without specific sites identified it is not possible to fully assess whether there could be any impacts arising from water quality.

5.110. The 2012 HRA had 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, it screened out this Policy as it was not actively promoting or seeking any new aggregate recycling sites and the policy makes it clear that any proposals for new facilities proposals must be ‘environmentally acceptable’.

5.111. Proposed amendments to the supporting text in Paragraph 3.75 of the emerging MLP state that, “proposals for new aggregate recycling sites should not be located where they would cause unacceptable impacts or harm to neighbouring land uses by virtue of noise, vibration, dust, light pollution, or heavy road traffic”. This paragraph also recommends that proposals would need to be well located in relation to the main road network. It does not provide any provision for prevention of potential for impacts upon water quality.

Mitigation

5.112. Given the parameters in the Plan for Policy S5 relating to appropriate locations listed in paragraph 3.73, and the fact that aggregate recycling facilities should be on the main road network, the proposed additional text for S5 should be sufficient to avoid adverse effects on site integrity.

5.113. Any new aggregate recycling sites must be able to demonstrate that they can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ.

S6: Provision for sand and gravel extraction

5.114. Policy S6 was screened out in the 2012 HRA because it considered that, “*the main aspect of this policy is the allocation of Preferred Sites.... These have already been assessed in the preceding table and a conclusion of ‘no likely significant effect’ has been drawn. The policy does not seek to promote any other sites beyond the Preferred Sites*”.

5.115. Policy S6 was screened in to this HRA 2021 because it also enables sites to come forward at non-Preferred Sites if certain criteria are met. It was therefore not possible to conclude likely significant effect without more information about the location of the sites, or by ensuring adequate mitigation is in place.

5.116. This Policy has already been discussed in the disturbance section above. It was noted in Chapter 2 that the supporting information for S6, in paragraph 3.105, states that “*other proposals for sand and gravel extraction at locations situated outside of the areas identified for future working will normally be resisted by the Mineral Planning Authority (MPA) unless there is an ‘over-riding justification’ and/ or ‘over-riding benefit’ as set out in Policy S6*”. Examples include agricultural irrigation reservoirs, borrow pits (e.g. for a road scheme) or Prior extraction to prevent mineral sterilisation where a significant development is taking place. Consequently, this Policy enables the MLP to consider unforeseen or unknown circumstances and therefore it is not possible to know where these might be located over the life of the MLP. Consequently, it is also not possible to be able to identify whether adverse effects could arise in relation to water quality.

5.117. Policy S6 allows for the proposal of mineral extraction outside of Preferred Sites providing that they “can demonstrate a) an overriding justification and/ or overriding benefit for the proposed extraction”.

5.118. However, Part c) of Policy S6 also requires any proposed mineral extraction outside of Preferred Sites to demonstrate that they would be “environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan”.

Mitigation

5.119. Any minerals site being proposed that is not a Preferred Site must be able to demonstrate that they can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA’s recommendations.

S8: Safeguarding mineral resources and mineral reserves

5.120. Policy S8 designates Mineral Safeguarding Areas (MSAs) to safeguard defined mineral types from sterilisation by other developments and encourages mineral extraction, thereby creating the potential for Likely Significant Effect.

5.121. S8 was screened out in the 2012 HRA because the “policy is concerned exclusively with safeguarding minerals reserves rather than promoting their extraction in particular locations. ...there is no presumption that resources defined will be worked. As such, it will not result in a likely significant effect on any European [i.e. Habitats] Sites”.

5.122. S8 was screened into this HRA 2021 because, without having the knowledge or certainty of specific locations, it was not possible to conclude that there would be no Likely Significant Effect. Any new sites may require project-level HRA if within an IRZ.

5.123. This Policy has already been discussed in the disturbance section above. Minerals are a finite resource and can only be extracted from where they are naturally located (for the distribution across Essex, please see the Policies Map in the MLP). Minerals applications being considered under Policy S8 will be driven by other developments. A newly proposed paragraph in the supporting text of policy S8 of the emerging MLP proposes that the minerals extraction should “be viewed in the context of the development as a whole, not as a standalone commercial mineral

extraction activity". As a result, specific site locations are not necessarily known (though many will be driven by the districts' local plans) and are not included in this MLP.

Mitigation

5.124. Any minerals site proposed on safeguarded land arising from other surface development and being considered under Policy S8, must be able to demonstrate that it can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA's recommendations.

S9: Safeguarding Provisions at Parkeston Quay

5.125. The Stour and Orwell SPA and Ramsar site has been screened in due to the safeguarding of Parkeston Quay as a possible new transshipment site.

5.126. As discussed in the disturbance section above, the 2012 HRA advises that "Parkeston Quay is an existing developed quay/wharf immediately adjacent to mudflats that constitute part of the Stour & Orwell Estuaries SPA/Ramsar site. However, the wharf itself is entirely land-based and is immediately adjacent to Harwich International Port. As such the area is already very busy with both land and shipping traffic." It was screened out on the basis of this and that Policy S9 is concerned only with safeguarding the site against conflicting development rather than promoting it.

5.127. The Site Improvement Plan for the Stour and Orwell SPA and Ramsar site raises two issues in relation to the ports and their potential impact on the SPA and Ramsar site. The first of these issues are in relation to invasive species and the second is in relation to dredging. These are however issues related to shipping activities, not the actual transshipment site itself. Water quality is not raised as an issue in the SIP.

5.128. This HRA acknowledges that, if the Parkeston Quay transshipment site comes forward as a planning application, it would be situated within the existing area of Harwich International Port and not immediately adjacent to the SPA and Ramsar site (as referred to above).

Mitigation

5.129. It is important that water run-off from minerals sites is carefully managed to ensure that there is no sediment run-off or pollutants from the site into the watercourses and eventually into the estuarine Habitats Sites.

5.130. Measures might include:

- Ensuring pollution prevention control methods are in place.
- Vegetation control/ management.
- Use of Construction Environment Management Plans (CEMPs), which can be a condition of any planning permission (under Policy DM2).

5.131. Environment Agency permits are also required to prevent various forms of pollution, although these require a separate process from the MLP. Paragraph 183 of the NPPF (2019) states that

“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.”

5.132. Providing that adequate pollution prevention methods are put in place, and as it would be other port infrastructure, it would be unlikely to have an Adverse Effect on Site Integrity alone.

DM1: Development Management Criteria

5.133. Policy DM1 was screened out in the 2012 HRA but screened in for this HRA as it could not be concluded that there would be no Likely Significant Effect without further consideration and possibly mitigation.

5.134. 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 Likely Significant Effect.

5.135. The need to avoid adverse effects on the integrity of Habitats Sites is included within the supporting text of DM1, but it is not explicit within any policy of the MLP.

Mitigation

5.136. The following supporting text should be amended in paragraph 5.15:

“... enable the carrying of material by water and rail wherever possible. The Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.”

5.137. In addition, Policy DM1 should ensure that anything permitted through the MLP will deliver good practices to avoid water quality issues on any known or windfall site. Any other future proposals requiring a decision under the MLP, which fall within a IRZ should require a project-level HRA through Policy DM1.

5.138. Conditions can be used to avoid or control the potential impacts of development, e.g. Construction Environment Management Plans (CEMPs) during the construction period. Other conditions can also be used over the whole of the mineral site operation. Thus, conditions can address measures to control water pollution. These conditions are a standard part of a development management planner’s toolkit. They can be a part of any planning permission and all such opportunities are provided for through Policy DM2: Planning Conditions and Legal Agreements (which was screened out); i.e.: *“When granting planning permission for minerals developments, the Mineral Planning Authority will impose conditions and/or require legal agreements to mitigate and control the effects of the development and to enhance the environment.”*

DM3: Primary Processing Plant and DM4: Secondary Processing Plant

- 5.139. Policies DM3 and DM4 were screened in because it was not possible to conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring adequate mitigation is in place. This is discussed in the disturbance section above and may also adversely affect water quality.
- 5.140. DM3 and DM4 were screened out by the 2012 HRA on the grounds that they do not promote or seek to deliver development.
- 5.141. Policy DM3 requires that minerals extraction will only be permitted where the primary processing plant will not have an unacceptable impact on the 'surrounding environment'.
- 5.142. DM4 requires that "Proposals for the secondary processing and/ or treatment of minerals will only be permitted where it can be demonstrated that there would be no unacceptable impact upon... the local environment".
- 5.143. This HRA 2021 screened in DM3 and DM4 as it could not conclude Likely Significant Effect without more information about the location of the facilities, or by ensuring that adequate mitigation is in place. It is not known where any new primary or secondary plants might be located under these policies other than in unspecified areas of minerals development. Consequently, it is also not possible to be able to identify whether adverse effects could arise in relation to water quality. Therefore, mitigation measures are required to ensure that there will be no AEIOI.

Mitigation

- 5.144. Any new primary or secondary facilities should avoid causing adverse effect on site integrity. This will need to be demonstrated through a project-level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 has been updated in line with the HRA's recommendations.

P1: Preferred Sites for Sand and Gravel Extraction / A31: Maldon Road, Birch

- 5.145. Birch Quarry is hydrologically connected to the Colne Estuary. A water course runs through the Site and feeds into the Roman River, and this ultimately feeds into the River Colne. Colne Estuary SPA and Ramsar sites are approximately 14km downstream. Site A31 (and therefore P1) was screened in as a precautionary approach and as mitigation may be required. A31 was screened out in 2012.
- 5.146. The Essex Rivers Hub¹⁴ has set out an overview of the Roman River catchment (which includes Layer Brook, Roman River and Virley Brook)." The Water Framework Directive (WFD) status for both of these water bodies within this catchment is Moderate Potential. Phosphate levels are classed as bad for all but the Roman River, which is still classed as poor. Generally, water quality is otherwise good, except for Layer Brook which has high levels of ammonia, and also low dissolved oxygen levels."

¹⁴ These details can be found at <http://essexrivershub.org.uk/index.php/catchment-overview/167-catchment-overviews/756-roman-river-catchment-overview>

- 5.147. Apart from phosphate, the Roman River only has issues with fish and diatom (plants smaller than the eye can see), which are both classed as moderate. Fish levels are lower-than-expected due to a combination of high sediment loads. There is some mitigation proposed but it has not been put in place
- 5.148. The Essex Rivers Hub has also set out an overview of the River Colne catchment¹⁵. This also includes Salary Brook. The Water Framework Directive classification is poor in the middle and downstream sections of the River Cone. It is failing for flow and phosphates and morphology. In the downstream section plants are being impacted and both diatoms and macrophytes (plants visible to the naked eye) are failing elements, suggesting high levels of nutrients maybe an issue here, so levels of phosphate need to be addressed. This section is also failing for Annex 8 chemicals. Dissolved oxygen levels are good in the upstream and downstream sections and ammonia levels are very low throughout. There are also good aquatic invertebrate populations in the middle and downstream sections as well as very good fish populations downstream. Salary Brook has a WFD status of moderate and is failing for fish, phosphates and flows. Some positives for this brook are the high levels of dissolved oxygen and low levels of ammonia.
- 5.149. Despite the Water Framework Directive assessments and catchment overviews above, the Site Improvement Plan for the Colne Estuary SPA and Ramsar or the Essex Estuaries SAC does not raise any particular concerns regarding their water quality.

Mitigation

- 5.150. A watercourse runs through Site A31 and so careful consideration will need to be given to design, layout and phasing in order to protect the watercourse.
- 5.151. It is important that water run-off from minerals sites is carefully managed to ensure that there is no sediment run-off or pollutants from the site into the watercourses and eventually into the estuarine Habitats Sites.
- 5.152. Measures might include:
- An appropriate buffer between the working areas and the watercourses to minimise the potential for sediment leaving a site.
 - Vegetation control/ management.
 - Sediment management strategies
 - Appropriate channel maintenance strategies and techniques.
 - Construction Environment Management Plans (CEMPs) and other conditions to address measures such as damping down of dust.
- 5.153. Environment Agency permits are also required to prevent various forms of pollution, although these require a separate process from the MLP.
- 5.154. Paragraph 183 of the NPPF states that “The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.”

¹⁵ These details can be found at: <http://essexrivershub.org.uk/index.php/catchment-overview/167-catchment-overviews/754-colne-summary>

5.155. It is considered that, given the distance to the Colne Estuary from Birch Quarry, as long as appropriate mitigation is put in place adverse effect on site integrity could be ruled out.

P2: Preferred Sites for Silica Sand Extraction/ B1: Slough Farm, Ardleigh

5.156. B1 Slough Farm, Ardleigh is hydrologically connected/ upstream of the Colne Estuary. This site is adjacent to a water course which has hydrological connection to Salary Brook which feeds into the River Colne. It is approximately 10km by travelling along the water courses from Colne Estuary SPA and Ramsar site.

5.157. The 2012 HRA screened it out as it did not identify any impact pathways for B1.

5.158. The Essex Rivers Hub has also set out an overview of the River Colne catchment¹⁶ and this is set out in the paragraphs above about p1/ A31.

5.159. Despite the Water Framework Directive assessments and catchment overviews above, the Site Improvement Plan does not raise any particular concerns regarding water quality within the Colne Estuary SPA and Ramsar or the Essex Estuaries SAC.

Mitigation

5.160. Mitigation measures should be the same as those considered for A31 above.

5.161. It is considered that, given the distance to the Colne Estuary from B1 Slough Farm, as long as appropriate mitigation is put in place, adverse effect on site integrity could be ruled out.

General Use of Mitigation Measures for Water Quality

5.162. It is important that water run-off from minerals sites is carefully managed to ensure that there is no sediment run-off or pollutants from the site into the watercourses and eventually into the estuarine Habitats Sites.

5.163. Measures might include:

- An appropriate buffer between the working areas and the watercourses/ estuary to minimise the potential for sediment leaving a site.
- Vegetation control/ management.
- Sediment management strategies
- Appropriate channel maintenance strategies and techniques.
- Construction Environment Management Plans (CEMPs) which can address measures such as damping down of dust. CEMPs can be a condition of any planning permission.

5.164. Environment Agency permits are also required to prevent various forms of pollution, although these require a separate process from the MLP.

5.165. Paragraph 183 of the NPPF states that “The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of

¹⁶ These details can be found at: <http://essexrivershub.org.uk/index.php/catchment-overview/167-catchment-overviews/754-colne-summary>

processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.”

Applying the Integrity test for Water Quality

5.166. If the mitigation proposed above is embedded into the MLP it can be concluded that there will be no adverse effects on site integrity.

5.167. It will also protect any Habitats Site from adverse effects on integrity arising from any other development whose nature, extent and location are not identified in this MLP.

Air Quality

5.168. Policies and Preferred Sites within Scope for this AA:

- S2: Strategic priorities for minerals development
- S6: Provision for sand and gravel extraction
- S8: Safeguarding mineral resources and mineral reserves
- S9: Safeguarding mineral transshipment sites and secondary processing facilities
- S11: Access and Transportation
- S12: Mineral Site Restoration and After-Use
- P1: Preferred and Reserve Sites for Sand and Gravel Extraction
- DM1: Development Management Criteria

5.169. This section includes the potential increase of any type of activity that results in air quality impacts leading to effects on features of Habitats Sites.

Habitats Sites within Scope of the assessment of air quality impacts from the MLP

5.170. As listed in paragraph 3.22 above, the majority of the Habitats Sites with potential for Likely Significant Effect being caused by air quality impacts are as follows:

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

5.171. As identified in the various SIPs, the above list is based on sensitivities of vegetation or designated features which depend on supporting habitat which is considered sensitive to changes in air quality. However, as shown below the Qualifying Features are not considered to be affected by air quality impacts from nitrogen deposition locally and most are not related to likely effects from the MLP.

Abberton Reservoir SPA and Ramsar

5.172. 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 deposition¹⁷.

Blackwater Estuary SPA and Ramsar

5.173. Declines of breeding Little Tern appear to be due to other impacts e.g. erosion and disturbance, rather than over-vegetation breeding areas caused by nitrogen deposition.

Colne Estuary SPA and Ramsar

5.174. 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, the decline is likely to be due to other impacts e.g. erosion and disturbance, rather than over-vegetated breeding areas caused by nitrogen deposition

Essex Estuaries SAC

5.175. Declines of breeding Little Tern appear to be due to other impacts e.g. erosion and disturbance, rather than over-vegetated breeding areas caused by nitrogen deposition.

Stour & Orwell Estuaries SPA and Ramsar

5.176. The sensitive features are currently considered to be in favourable condition on the site. It is also noted that a conclusion of no adverse effect on integrity was also reached by HRAs carried out to support Local Plans in Suffolk. The assessment of impacts from the Plan in combination with other plans and projects is also considered unlikely based on Natural England advice for the Babergh & Mid Suffolk Joint Local Plan relating to an air quality monitoring strategy which has been agreed in principle with Natural England. Whilst the air quality at the reference Habitats Sites exceeds the critical loads, impacts from traffic generated by the Local Plan are considered unlikely to result in Likely Significant Effect upon the qualifying features and key sensitive areas of these Habitats Sites. The air quality strategy will include desktop analysis to inform whether further surveys or remedial measures may be necessary in the long-term.

5.177. The potential for Likely Significant Effect from the Essex MLP on the Stour & Orwell Estuaries SPA and Ramsar site via use of the A14 Orwell bridge, is therefore considered unlikely from the MLP alone.

Hamford Water SAC

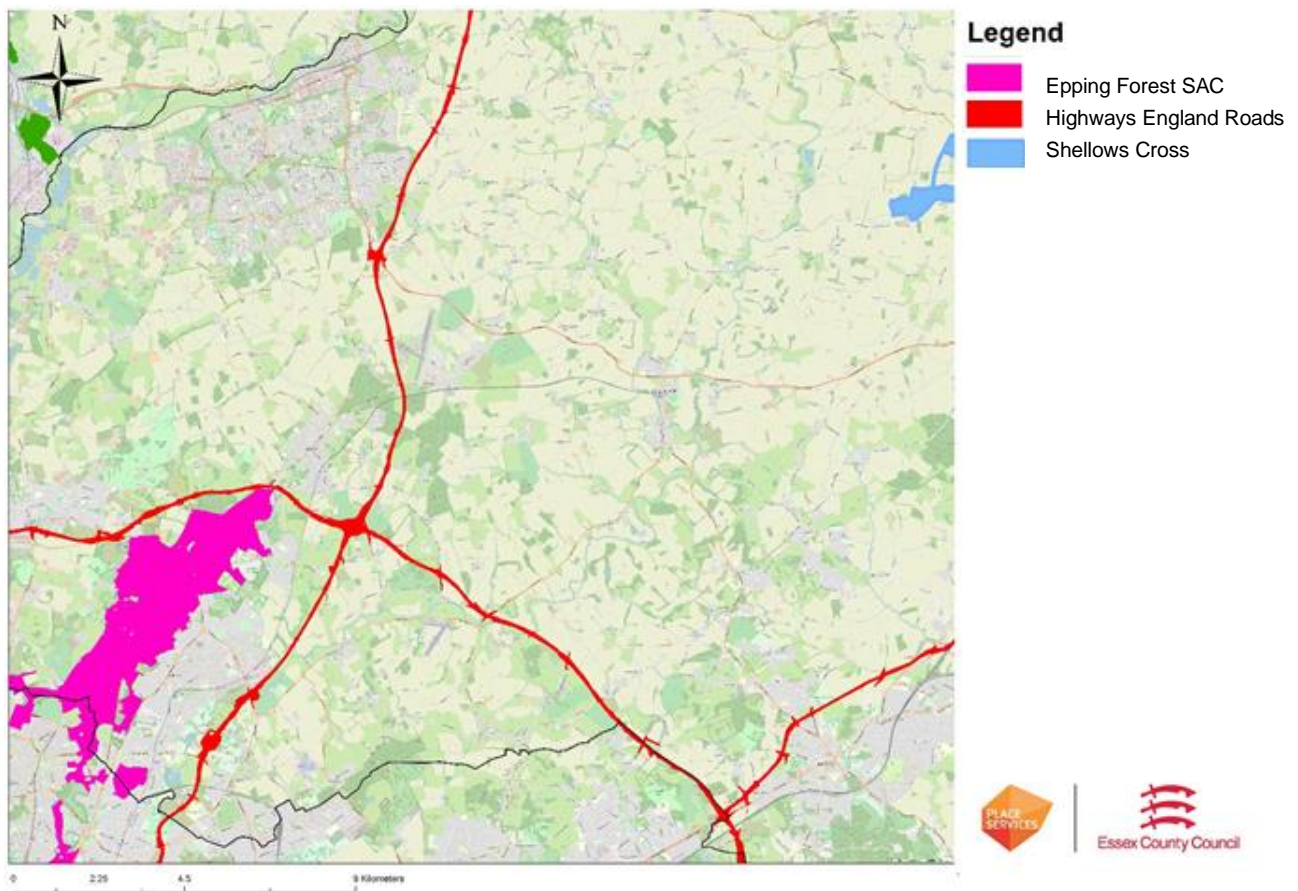
5.178. Although this Habitats Site includes Fisher's estuarine moth, the sensitive features are currently considered to be in favourable condition.

¹⁷ European Site Conservation Objectives: Supplementary advice on conserving and restoring site features for Abberton Reservoir SPA (Date of Publication: 15 March 2019, Natural England)

Habitats Sites needing detailed assessment

5.179. We note that there are no Preferred Sites within 200 metres of a Habitats Site and furthermore, the major roads tend to lead away from them as shown in Map 3: Major roads, Habitats Sites and Preferred Sites. The only non-coastal site is Epping Forest SAC and the majority of material produced from MLP Preferred Sites is used within Essex although some is transferred to neighbouring counties.

5.180. On this basis, it is therefore considered that the only Habitats Site requiring detailed assessment of nitrogen deposition linked to MLP is Epping Forest SAC. See Map 5 below.



Map 5: Epping Forest SAC and Major Road Networks

Epping Forest SAC

5.181. The SIP for this Habitats Site states that the qualifying features include H4010- Wet heathland with cross-leaved heath, H4030- European dry heaths, H9120- Beech forests on acid soils and Stag beetle which needs deadwood in the supporting Beech woodland habitat. Nitrogen deposition exceeds site-relevant critical loads for ecosystem protection and some parts of the site are assessed as in unfavourable condition for reasons linked to air pollution impacts.

5.182. The ancient forest – wood pasture mosaic of Epping Forest SAC supports habitats that are sensitive to air quality (wet heathland, dry heathland, acid grassland, bogs, species-rich neutral grassland, wetlands, wood pasture and woodland communities including ancient and veteran

trees, bryophytes, fungi and lichen) and these species are currently experiencing prolonged exceedances above air quality thresholds for NO_x, ammonia and nitrogen deposition.

5.183. The Court judgement (CJEU Holohan C- 461/17) imposes 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.

5.184. Therefore, consideration of the SSSI features of Epping Forest SAC are necessary in line with the Holohan Court ruling. The most recent condition assessment of the underlying Site of Special Scientific Interest (SSSI) noted that the unit in this location (Unit 105) was in Favourable condition, however: "... there remains a very significant issue relating to air quality and the related deposition of acidity and of nitrogen. Many veteran trees within the unit display clear symptoms of stress (e.g. thin canopy and die-back of leading shoots), there is excessive growth of bramble, and there are dense stands of nettles along roadsides and ride edges."

5.185. Natural England's advice referred to the fact 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."

5.186. There are many uncertainties regarding transportation routes to and from the quarries, and the likely routes to be taken are unknown. In particular, any vehicle travelling to and from London or South Essex may travel on the M25 and pass near to Epping Forest SAC. The assessment of impacts from the MLP needs to take account of the risks of air pollution and how these can be managed and/or reduced.

5.187. The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites from the Plan alone.

In Combination Assessment

5.188. The Waddenzee judgment¹⁸ provides a clear interpretation of the legislation protecting Habitats Sites. An appropriate assessment of the implications for the Habitats Site concerned with the plan or project must precede its approval, and take into account the cumulative effects which result from the combination of the plan or project with other plans or projects in view of the Habitats Site's conservation objectives. Such an assessment therefore implies that all the aspects of the

¹⁸ Waddenzee ruling (C-127/02 paragraphs 52-54, 59)

plan or project which can, individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.

- 5.189. There is a greater need for local authorities to consider modelling their Local Plan air quality impacts collectively, as a group of authorities around Epping Forest, rather than creating separate individual models. The Local Planning Authorities around Epping Forest SAC & SSSI are aware of this issue and are seeking to strategically address it through their Local Plans, principally by ensuring compliance with SEA and HRA requirements. The MoUs for the West Essex/Hertfordshire Housing Market Area (HMA) and Highways & Transport Infrastructure include Epping Forest District Council, Harlow District Council, East Herts District Council, and Uttlesford District Council as well as Essex County Council, Hertfordshire County Council and Highways England.
- 5.190. Essex County Council is an attendee at meetings of the Epping Forest SAC Oversight group which manages the impacts of Growth although as the Highways Authority, although it has not been asked to sign the Memorandum of Understanding in relation to the interim Air Pollution Mitigation Strategy for Epping Forest SAC. It is hoped however that it will be in a position to play an active role in identifying transport and infrastructure mitigation measures in conjunction with Highways England and other Highways authorities for delivery.
- 5.191. Natural England's advice in relation to air quality impacts from traffic using the M25 needs to include the HRA for the Lower Thames Crossing NSIP. This document is currently unavailable as the Development Consent Order for this infrastructure project has been withdrawn from the Planning Inspectorate.
- 5.192. Paragraph 5.15 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 Likely Significant Effect from predicted impacts from the MLP either alone or in combination with other plans and projects.
- 5.193. As the Minerals Local Plan Review does not include any new quarries and there is no extended duration of temporary effects due to the nature of minerals extraction, there will be no additional traffic movements contributing to emissions of ammonia and nitrogen oxides.
- 5.194. The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.
- 5.195. Some local plans have started to undertake air quality monitoring as part of their air quality measures for Habitats Sites.

Table 13: Plans and Projects to be considered in combination with the MLP

Title of plan or Project	Competent authority/ statutory body/plan owner	Title of HRA	Potential for in combination effects
Hertfordshire Minerals Local Plan	Hertfordshire District Council	Hertfordshire Minerals Local Plan	The Appropriate Assessment concluded that the MLP will not result in adverse

		Habitats Regulations Assessment Report 2018	effects as a result of physical loss of habitat (on-site and off-site), noise, vibration and light pollution and changes to water quantity and quality. The mitigation measures set out in the MLP, work to avoid physical loss of habitat (on-site and off-site) and avoid unacceptable effects generated by noise, vibration and light pollution and changes in water quality and quantity. In relation to air pollution effects the Appropriate Assessment concluded that the MLP will not result in adverse effects on the integrity of the European sites within 200m of roads that may be used by HDV traffic from the MLP allocations.
Suffolk Minerals and Waste Local Plan	Suffolk County Council	Suffolk Minerals & Waste Local Plan Habitats Regulation Assessment (including Appropriate Assessment) November 2018	Allocations for mineral extraction at Barnham, Cavenham, and Wangford in West Suffolk were found to be likely to have a significant effect on European sites from a range of impact pathways. However, an assessment of potential impacts found evidence to demonstrate that the Local Plan would have no adverse effect upon the integrity of any European site.
Cambridgeshire and Peterborough Minerals and Waste Local Plan	Cambridge County Council and Peterborough City Council	Cambridgeshire and Peterborough Minerals and Waste Local Plan Further Draft Habitats Regulations Assessment March 2019	The Appropriate Assessment concluded that the MWLP will not result in significant adverse effects as a result of changes in surface/groundwater hydrology, changes in water quality, disturbance from noise, vibration and/or light pollution, dust contamination or air pollution impacts arising from policies and sites. For development coming forward on either the allocated sites or non-allocated sites, sufficient mitigation measures set out in the MWLP itself, or elsewhere, such as via regulatory requirements managed by the Environment Agency. The Local Plan adopts a precautionary approach and includes a requirement for applicable allocation site policies (i.e. sites M029 Gores Farm, Thorney and M034 Willow Hall Farm, Thorney that fall within the Nene Washes indicative Goose and Swan Functional Land IRZ) to include a requirement for a project level HRA screening to demonstrate that proposed development will not have any adverse effect on Nene Washes functional land.

Essex CC and Southend-on-Sea BC Replacement Waste Local Plan (2017)	Essex County Council	Habitats Regulations Assessment Screening Report (Place Services, January 2016)	It is considered that indirect effects on European sites could be mitigated through strict control procedures, imposed through planning conditions or the pollution control regime. Should residual effects remain, in-combination effects are possible and various high-level plans have been highlighted.
The South East Marine Plan	Marine Management Organisation	MMO1188: Habitats Regulations Assessment for the North-East, North-West, South-East and South-West Marine Plans: Appropriate Assessment Information Report including Screening Report (AECOM, July 2019)	Using the precautionary principle, adverse effects on integrity cannot be dismissed for most European sites until individual projects are devised and can be scrutinised in detail. There is a risk that issues which span the marine/coastal and terrestrial environment are overlooked because they fall between planning responsibilities. In-combination effects between the Plans is unlikely as the 2021 MLP will not impact the same sites as this Plan will impact.
The Thames Vision	Port of London	None available	Sports Opportunity Zones identified through the PLA's work on its Vision for the Tidal Thames (The Thames Vision) (2016) have the potential to see increased usage as a result of this future growth. Whilst there are some existing facilities in this location which facilitate the use of the river for sport, growth may drive additional demand for such facilities, requiring enhancement or additional provision to occur which would lead to in combination impacts on coastal and estuarine Habitats Sites.
Basildon Borough Reg 19 Local Plan	Basildon Borough Council	Basildon Borough Local Plan HRA Report (LUC, October 2018)	In-combination effects between the Plans is unlikely.
Braintree District Local Plan	Braintree District Council	HRA screening report for Braintree District Local Plan	In-combination effects between the Plans is unlikely.
Brentwood District Council Draft Local Plan: Preferred Site Allocations	Brentwood District Council	HRA of Brentwood DC Draft Local Plan Preferred Site Allocations (AECOM, Jan 2018)	In-combination effects between the Plans is unlikely.
Chelmsford Pre-Submission Local Plan	Chelmsford City Council	Chelmsford Pre-Submission Local Plan	In-combination effects between the Plans is unlikely

		HRA (Amec Foster Wheeler, Jan 2018)	
Colchester Borough Council Core Strategy	Colchester Borough Council	Core Strategy HRA	In-combination effects between the Plans is unlikely as the 2021 MLP will not impact the same sites as this Plan will impact.
Maldon District Local Development Plan	Maldon District Council	Maldon DC Local Development Plan Post Examination Sustainability Appraisal Report incorporating Strategic Environment Assessment and Habitats Regulations Assessment Final Report (Royal Haskoning DHV, March 2017)	In-combination effects between the Plans is unlikely.
Revised Proposed Submission Southend on Sea Development Management DPD	Southend on Sea Council	Sustainability Appraisal (including HRA) of the Revised Proposed Submission Southend on Sea Development Management DPD (Peter Brett Associates, March 2014)	In-combination effects between the Plans is unlikely.
Rochford Development Management Development Plan HRA screening (Dec 2013)	Rochford District Council	HRA Core Strategy	In-combination effects between the Plans is unlikely.
Tendring District Local Plan	Tendring DC	HRA of Tendring District Draft Local Plan Part (LUC, 2017)	In-combination effects between the Plans is unlikely
Thurrock Local Plan	Thurrock Council	HRA of Thurrock Local Plan (LUC, Jan 2019)	None as mitigation for Habitats Sites is included within the Plan
North Essex Authorities Shared Strategic Plan Part 1	Braintree DC, Colchester BC and Tendring DC	HRA Report for North Essex Authorities Shared Strategic Part 1 for Local Plans, (LUC, May 2017)	Providing that key recommendations and mitigation requirements are adopted and implemented the Shared Strategic Part 1 for Local Plans will not result in adverse effects on the integrity of European sites either alone or in-combination.
Harlow Local Development Plan	Harlow District Council	HRA Adoption Statement (AECOM, Nov 2020)	The HRA states that the negligible contribution that growth within the boundaries of these three authorities is forecast to make to changes in air quality

			<p>along the modelled roads. The air quality effect of growth on the SAC can therefore be addressed by focussing on mitigating growth in Epping Forest District. The new data therefore supports a conclusion of no adverse effect of the Harlow Local Development Plan on the integrity of Epping Forest SAC either alone or as part of an 'in combination' effect. The total forecast change in AADT on modelled links due to all three Councils together never exceeds 100 AADT and is usually much less (as low as 3-7 AADT on some links). Most of this is probably attributable to Harlow. This translates into a negligible change in the air quality modelling as set out in the latest HRA. Natural England's comments on the HRA acknowledged that it was appropriate to focus on growth in Epping Forest District and consider growth in the other authorities (Harlow, East Herts and Uttlesford) collectively resulted in a negligible effect. As commented by the Inspector in paragraph 23 of his report '<i>The HRA also concludes that the increase in air pollution from traffic movements arising from the HLDP would be negligible and Natural England accepts that in these circumstances it would not be reasonable to require mitigation</i>'.</p>
Neighbourhood plans	Relevant District/ Borough Councils	Individual HRA screening / Appropriate Assessments	None as mitigation for Habitats Sites is included within the Plan
South Essex Joint Strategic Plan	Association of South Essex Local Authorities- A joint project between the following local authorities: Castle Point, Southend-On-Sea, Basildon, Brentwood, Thurrock and Rochford.	Information for this plan is insufficiently detailed to enable a quantitative in-combination assessment.	N/A
Essex County Council Local Transport Plan for Essex, 2011	Essex County Council	Essex County Council Local Transport Plan 3 HRA screening report (Mouchel, June 2011)	The assessment concluded that implementation of the LTP3 and its associated Transport Policies is unlikely to result in significant effects occurring at Natura 2000 sites. Although future development driven by the LTP3 has the

			potential to impact N2000 sites, there is sufficient flexibility within the LTP3 to ensure that future development is designed and implemented in a manner that either completely avoids or mitigates for impacts to Natura 2000 sites.
The Thames Estuary 2100 Plan	Environment Agency	Submitted to Defra for approval under Habitats Regulations	There is a predicted adverse effect on integrity without mitigation from the plan alone.
South Essex Outline Water Cycle Study Technical Report Final September 2011	Castle Point, Rochford, Basildon and Essex councils	N/A	N/A
Essex and Suffolk Water (2014) Final Resources Management Plan	Essex and Suffolk Water	Unknown	Unknown
River Basin Management Plan Anglian River Basin District	Environment Agency	Submitted to Defra for approval under Habitats Regulations 2017	Unknown
Essex and South Suffolk Shoreline Management Plan 2	Environment Agency	Submitted to Defra for approval under Habitats Regulations 2017	Concluded that it was unlikely to have an in-combination effect with land use plans.
Shoeburyness Coastal Management Scheme Non-Technical Study	Southend-on-Sea Borough Council	Early stages. No HRA produced yet.	Unknown
London Southend Airport Joint Area Action Plan (JAAP)	Rochford DC and Southend on sea Borough Council	Southend Airport and Environs HRA (Enfusion, Jan 2013)	No adverse effects on European site integrity either alone or in-combination.
Projects			
Port of Tilbury extension NSIP	Secretary of State	HRA report (Jan 2019)	With all the avoidance and mitigation measures secured in the DCO, including the DML, being implemented in full, will not adversely affect the integrity of the Thames Estuary and Marshes SPA, the Thames Estuary and Marshes Ramsar site or the functionally-linked land associated with these sites either alone or in-combination with any other project or plans.

Lower Thames Crossing NSIP	Secretary of State	None available yet	Information for this project is still considered insufficiently detailed to enable a quantitative in-combination assessment.
Silvertown Tunnel	Transport for London	Environmental Statement Appendix 9G (6.3.9.7) Habitat Regulation Assessment (HRA) Revision 1.1 November 2016	The traffic modelling data for the Scheme has showed that the Nitrogen contribution from the Scheme, within 200m of Epping Forest, would not significantly increase the exceedances already present. The Scheme will therefore not meet the threshold criteria for air quality assessment and that no further assessment is required as there would be no perceptible change. This has been confirmed upon receipt of the final traffic data. In conclusion no likely significant effects upon the Epping Forest SAC site have been identified resulting from the Scheme.
Thurrock Flexible Power Generation NSIP	Secretary of State	None available yet	Information for this project is still considered insufficiently detailed to enable a quantitative in-combination assessment.
Tilbury Energy Centre (TEC) NSIP	Secretary of State	None available yet	Information for this project is still considered insufficiently detailed to enable a quantitative in-combination assessment.
Former Coryton Oil Refinery	Thurrock Council	Not available yet	Information for this project is still considered insufficiently detailed to enable a quantitative in-combination assessment.
Shoeburyness Coastal Management Scheme Non-Technical Study	Southend-on-Sea Borough Council	Early stages. No HRA produced yet.	Information for this project is still considered insufficiently detailed to enable a quantitative in-combination assessment.

Embedding Mitigation into the Minerals Local Plan

5.196. In this section, a number of proposals have been made to amend policies or supporting text for S5, S9, S11, S12, DM1 and A31. This is drawn from the mitigation proposed in the disturbance, water quality and air quality sections of the Appropriate Assessment above.

Policy S5: Creating a network of aggregate recycling facilities

5.197. The MLP advises that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. No locations have been provided for new sites. The Policy sets out parameters for when new sites might be acceptable, but without specific sites identified it is not possible to fully to assess whether there could be any adverse effects on

integrity resulting from disturbance, water quality or air quality. Therefore, the following text should be included within the supporting text for policy S5:

Any new aggregate recycling sites 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 Habitat Regulation Assessment, which will be required for any new aggregate recycling sites which fall within an IRZ.

Policy S9: Safeguarding mineral transshipment sites and secondary processing facilities

5.198. A new transshipment site at Parkeston Quay at Harwich Port would be within the existing port area. However, due to the close proximity of this potential transshipment site to the Stour Estuary SPA and Ramsar site, it must be ensured that any future proposals to create a transshipment site would not cause an adverse effect on integrity of the SPA or Ramsar site through its construction or long-term use, alone or in combination with other plans or projects, resulting from disturbance, water quality or air quality. A project-level Habitats Regulation Assessment will be required to demonstrate this.

5.199. The following should be included within the supporting text for Policy S9, in the section about *Mineral Transshipment Sites*:

Any proposals to create a transshipment site at Parkeston Quay at Harwich Port will require a project-level Habitats Regulation Assessment.

S11: Access and Transportation

5.200. The Predicted Environmental Concentration (PEC) of emissions resulting from the contribution of the MLP access and transportation S11 policy is unknown. The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.

5.201. The need to avoid adverse effect on integrity from any predicted air quality impacts from access and transportation has led to a recommendation for Policy DM1 to be amended

Policy S12: Mineral Site Restoration and After-Use

5.202. Preferred Site A31 Maldon Road, Birch is less than 2.5km from Abberton Reservoir SPA and Ramsar site. There should be no landfilling of putrescible waste at A31, to prevent nest predation by gulls and crows that the waste may attract on the breeding cormorants (a qualifying feature of Abberton Reservoir SPA). Restoration proposals of other sites situated within any Impact Risk Zones (IRZ) should also avoid using putrescible waste or be able to need to demonstrate that the infilling will not result adverse effects on integrity through a project-level HRA.

5.203. With respect to the potential for disturbance the following underlined words have been recommended for inclusion within the supporting text for Policy S12, for example in Paragraph 3.205.

“Restoration proposals for sites situated within an IRZ 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. This is to avoid Adverse Effect on Integrity (AEOI) on those Habitats Sites, such as by preventing the encouragement of predation on protected species by gulls and crows.”

5.204. The use of suitable restoration of minerals sites is an important consideration for operators and landowners and it should be explicit that the restoration process or final outcome must not cause an adverse effect on integrity, for example through the process of importing waste to raise site levels, or by recreational use. In order to prevent any unknown adverse effects through site restoration of any future site Policy S12 should explicitly state that there should be no adverse effects on site integrity, *either alone or in combination with other plans and projects*.

5.205. Clause I of Policy S12 should be updated to include:

“Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided, either alone or in combination with other plans and projects,”

DM1: Development Management Criteria

5.206. Paragraph 5.15 in the *transport* section of the supporting text of DM1 encourages the carrying of material by water and rail wherever possible for environmental reasons. The issue of air quality impacts also needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. However, DM1 does not recognise that most of the coast is internationally designated and barges could cause disturbance, and a potential adverse effect on integrity. Therefore, an additional sentence should be added to paragraph 5.15 as follows:

“... enable the carrying of material by water and rail wherever possible. For example, the Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.”

A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites.

5.207. The need to avoid all adverse effects on the integrity of Habitats Sites is included within the supporting text of Policy DM1, but it is not explicit within any policy of the MLP. Policy S10 makes specific reference to protection in relation to air quality. The protection of Habitats Sites should be added to Policy DM1 to ensure that any future proposals of any kind permitted through the MLP will avoid adverse effects on the integrity of any Habitats Sites, either alone or in combination with other plans and projects. This is to ensure that unallocated minerals sites and supporting infrastructure and processes- e.g. aggregate recycling, primary or secondary processing and other transshipment sites- are considered appropriately, if they come forward within an IRZ.

5.208. The following amendment should be made to Policy DM1 to ensure any proposals permitted through the MLP avoid adverse effects on site integrity of any Habitats Sites, either alone or in combination with other plans and projects:

“Adverse effects on the integrity of internationally or nationally important wildlife sites must be avoided, either alone or in combination with other plans and projects.

This must be demonstrated through a project level Habitat Regulation Assessment, which will be required for any future proposals requiring a decision under the MLP, which fall within an IRZ.

5.209. A new final section should be added to paragraph 5.41 (*Biodiversity and Geological Conservation*) to ensure that it is compliant with the legislation and guidance, as follows:

“An assessment under the relevant Conservation of Habitats and Species Regulations, or its replacement, may be required to see if an ‘Appropriate Assessment’ is needed in relation to a Habitats Site. It must be ensured that there will be no adverse effect on integrity to these sites either alone or in combination with other plans and projects. A project-level Habitats Regulations Assessment will be needed for any sites not allocated in the MLP.”

5.210. Conditions can be used to avoid or control the potential impacts of development, e.g. Construction Environment Management Plans (CEMPs) during the construction period. Other conditions can also be used over the whole of the mineral site operation, for example to control noise. Thus, conditions can address seasonal working, damping down of dust, screening and measures to alleviate noise pollution and should help to address noise, light and other forms of disturbance and water quality issues. These conditions are a standard part of a development management planner’s toolkit. They can be a part of any planning permission and all such opportunities are provided for through Policy DM2: Planning Conditions and Legal Agreements (which was screened out); i.e.: “*When granting planning permission for minerals developments, the Mineral Planning Authority will impose conditions and/or require legal agreements to mitigate and control the effects of the development and to enhance the environment.*”. No additional recommendations need to be made in this HRA.

Policies DM3: Primary Processing Plant; DM4: Secondary Processing Plant; S5: Creating a network of aggregate recycling facilities; S6 Provision for sand and gravel extraction and S8: Safeguarding mineral resources and mineral reserves

5.211. Any new minerals site, primary or secondary processing plant site or, aggregate recycling facility should avoid causing an adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ.

5.212. It will be sufficient for Policy DM1 to ensure that this is considered, providing that DM1 has been updated in line with the HRA’s recommendations.

Site A31: Maldon Road, Birch

5.213. Birch Quarry is hydrologically connected and upstream of the Colne Estuary. A water course runs through the Site which feeds into the Roman River, and this ultimately feeds into the River Colne. Colne Estuary SPA and Ramsar are approximately 14km downstream. A precautionary approach is taken and so mitigation may be required. Careful consideration will need to be given to design, layout and phasing in order to protect the watercourse and ultimately water quality of the Colne Estuary SPA and Ramsar site.

5.214. Additional specific advice for Birch Quarry regarding the watercourse running through A31 Specific should be included within the MLP, as follows.

A watercourse, leading ultimately to the Colne Estuary SPA and Ramsar site, runs through the middle of Preferred Site A31 at Birch Quarry and so careful consideration will need to be given to design, layout and phasing of the mineral site in order to protect the watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site.

5.215. The embedded mitigation proposed above is sufficient to deal with all the other policies that were screened in during Stage I. These were screened in as there was a connection with the issues raised above. However, the MLP should take into account all policies and so there is no need to repeat the above requirements within every policy.

Re-applying the integrity test

5.216. At this stage the integrity test should be re-applied to check if the proposed mitigation is now sufficient to avoid adverse effects on integrity. Where there may still be adverse effects on the ecological integrity of Habitats Sites, in view of the Sites' conservation objectives, additional mitigation measures should be considered.

5.217. The sections immediately above have considered each potential impact pathway against individual policies screened in, looked at how potential impacts might be mitigated and whether embedded mitigation is sufficient to avoid Adverse Effects on Integrity. A summary table (Table 14) is provided in the Recommendations section.

5.218. If the measures proposed in the *Embedding Mitigation into the Local Plan* section above is embedded into the MLP, it can be concluded that there will be no adverse effects on the integrity of any Habitats Site, either alone or in combination with other plans and projects, with the exception of air quality in relation to Epping Forest SAC.

5.219. The embedded mitigation proposed above is sufficient to deal with all the other policies that were screened in during Stage I.

5.220. This assessment has provided the justification that the MLP can avoid adverse effects on site integrity for all impact pathways and all Habitats Sites EXCEPT with respect to air quality and Epping Forest SAC from the Plan alone or in combination with other plans and projects. Further data is needed to support this assessment.

Monitoring

5.221. No monitoring is currently proposed as part of the mitigation measures within this HRA. However, advice is still awaited from Natural England with regards to how this HRA can assess the potential for Likely Significant Effect on Epping Forest SAC as a result of impacts of air quality derived from the MLP alone and in combination. This advice will be considered upon receipt and once air quality issues have been fully addressed, more information will follow once air quality issues have been fully addressed in a later iteration of this HRA.

Re-Consulting Natural England

5.222. Natural England has been consulted twice as part of Essex County Council's Duty to Cooperate engagement prior to the Regulation 18 consultation on the Essex Minerals Local Plan Review. During discussions so far it has so far provided some generic advice, predominantly in relation to air quality.

6. Recommendations

- 6.1. This Appropriate Assessment has recommended a number of amendments to the Minerals Local Plan, including some amendments/additions to policies.
- 6.2. Table 14 below summarises the HRA's recommendations and assessment with respect to the ability of each policy to avoid adverse effects on the integrity of Habitats Sites, either alone or in combination with other plans and projects. Appendix 2 demonstrates the ways in which the MLP has been altered as a result of the iterative process of producing this HRA.
- 6.3. The amendments include recommended policy wording changes and strengthening of the supporting text to policies S5, S9, S11, S12, DM1 and A31. The recommendations are set out below.

Policy S5: Creating a network of aggregate recycling facilities

- 6.4. The MLP advises that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. No locations have been provided for new sites. The Policy sets out parameters for when new sites might be acceptable, but without specific sites identified it is not possible to fully to assess whether there could be any adverse effects on integrity resulting from disturbance, water quality or air quality.
- 6.5. Therefore, the following measure should be included within the supporting text for policy S5:

Any new aggregate recycling sites 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 Habitat Regulation Assessment, which will be required for any new aggregate recycling sites which fall within an Impact Risk Zone.

Policy S9: Safeguarding mineral transshipment sites and secondary processing facilities (Transshipment site: Parkeston Quay)

- 6.6. A new transshipment site at Parkeston Quay at Harwich Port would be within the existing port area. However, due to the close proximity of to the Stour Estuary SPA and Ramsar site it must be ensured that any future proposals to create a transshipment site would not cause an adverse effect on integrity of the SPA or Ramsar site through its construction or long-term use, alone or in combination with other plans or projects, resulting from disturbance, water quality or air quality. A project-level Habitats Regulation Assessment will be required to demonstrate this.
- 6.7. Therefore, the following should be included within the supporting text for policy S9, in the section about Mineral Transshipment Sites:

Any proposals to create a transshipment site at Parkeston Quay at Harwich Port will require a project-level Habitats Regulation Assessment.

Policy S11: Access and Transportation

- 6.8. The issue of air quality impacts from the MLP needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. This will inform consideration of any mitigation needed for Policy S11.
- 6.9. The MPA is therefore advised to seek detailed engagement with Natural England to progress this matter.

Policy S12 Mineral Site Restoration and After-Use

- 6.10. Preferred Site A31 Maldon Road, Birch is less than 2.5km from Abberton Reservoir SPA and Ramsar site. There should be no landfilling of putrescible waste at A31, to prevent nest predation by gulls and crows that the waste may attract on the breeding cormorants (a qualifying feature of Abberton Reservoir SPA). Restoration proposals of other sites situated within any Impact Risk Zones (IRZ) should also avoid using putrescible waste or be able to need to demonstrate that the infilling will not result adverse effects on integrity through a project-level HRA.
- 6.11. With respect to the potential for disturbance the following underlined words have been recommended for inclusion within the supporting text for Policy S12, for example in Paragraph 3.205.

“Restoration proposals for sites situated within an IRZ 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. This is to avoid Adverse Effect on Integrity (AEOI) on those Habitats Sites, such as by preventing the encouragement of predation on protected species by gulls and crows.”

- 6.12. The use of suitable restoration of minerals sites is an important consideration for operators and landowners and it should be explicit that the restoration process or final outcome must not cause an adverse effect on integrity, e.g. through the process of importing waste to raise site levels, or by recreational use. In order to prevent any unknown adverse effects through site restoration of any future site Policy S12 should explicitly state that there should be no adverse on site integrity, *either alone or in combination with other plans and projects.*

- 6.13. Therefore, Clause I of Policy S12 should be updated to include:

“Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided, *either alone or in combination with other plans and projects,*”

Policy DM1: Development Management Criteria

- 6.14. Paragraph 5.15 in the *transport* section of the supporting text 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 adverse effect on integrity Therefore, an additional sentence should be added to paragraph 5.15 as follows:

“... For example, the Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.

A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites.

6.15. The need to avoid all adverse effects on the integrity of Habitats Sites is included within the supporting text of DM1, but it is not explicit within any policy of the MLP, although Policy S10 makes specific reference to protection in relation to air quality. The protection of Habitats Sites should be added to DM1 to ensure that any future proposals of any kind permitted through the MLP will avoid adverse effects on the integrity of any Habitats Sites, either alone or in combination with other plans and projects. This is to ensure that unallocated minerals sites and supporting infrastructure and processes- e.g. aggregate recycling, primary or secondary processing and other transshipment sites- are considered appropriately, if they come forward within an IRZ.

“Adverse effects on the integrity of internationally or nationally important wildlife sites must be avoided, either alone or in combination with other plans and projects.

This must be demonstrated through a project level Habitat Regulation Assessment, which will be required for any future proposals requiring a decision under the MLP, which fall within an Impact Risk Zone.

6.16. A new final section should be added to paragraph 5.41 (*Biodiversity and Geological Conservation*) to ensure that it is compliant with the legislation and guidance, as follows:

6.17. “An assessment under the relevant Conservation of Habitats and Species Regulations, or its replacement, may be required to see if an ‘Appropriate Assessment’ is needed in relation to a Habitats Site. It must be ensured that there will be no adverse effect on integrity to these sites either alone or in combination with other plans and projects. A project-level Habitats Regulations Assessment will be needed for any sites not allocated in the MLP”.

Policy A31: Maldon Road, Birch

6.18. Birch Quarry is hydrologically connected and upstream of the Colne Estuary. A water course runs through the Site which feeds into the Roman River, and this ultimately feeds into the River Colne. Colne Estuary SPA and Ramsar are approximately 14km downstream. A precautionary approach is taken. Careful consideration will need to be given to design, layout and phasing in order to protect the watercourse and ultimately water quality of the Colne Estuary SPA and Ramsar site.

6.19. Specific advice for Birch Quarry regarding the watercourse running through A31 Specific should be included within the MLP, as follows:

A watercourse, leading ultimately to the Colne Estuary SPA and Ramsar site, runs through the middle of Preferred Site A31 at Birch Quarry and so careful consideration will need to be given to design, layout and phasing of the mineral site in order to protect

the watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site.

- 6.20. The recommendations to amend or add text to the above policies do not exclude the need for project-level HRA but enables a conclusion of no adverse effects on integrity at the Plan level, because the identified risks to Habitats Sites have been 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.
- 6.21. Where there is the potential for adverse effects on a Habitats Site, development proposals will require a project level Habitats Regulations Assessment (HRA) at the planning application stage to determine whether the development will cause an adverse effect. Where it cannot be concluded that development is not likely to have an adverse effect on the integrity of the Habitats Site, the development will be determined in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended).
- 6.22. Details are summarised in Table 14 which sets out the HRA's recommendations for each policy to enable the avoidance of adverse effects on the integrity of Habitats Sites, either alone or in combination with other plans and projects. Appendix 2 demonstrates the ways in which the MLP has been altered as a result of the iterative process of producing this HRA.

Table 14: Proposed Amendments to the MLP

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
S5: Creating a network of aggregate recycling facilities	<p>Embed additional text into policy S5 / supporting text to ensure that any new aggregate recycling sites avoid causing AEOI.</p> <p><u>“Any new aggregate recycling sites 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.</u></p> <p><u>This must be demonstrated through a project level Habitat Regulation Assessment, which will be required for any new aggregate recycling sites which fall within an IRZ.”</u></p>	<p>The MLP advises that new and improved facilities will be needed to achieve sufficient aggregates recycling capacity in the County up to 2029. No locations have been provided for new sites. The Policy sets out parameters for when new sites might be acceptable, but without specific sites identified it is not possible to fully to assess whether there could be any adverse effects on integrity resulting from disturbance, water quality or air quality.</p>	<p>No adverse effects on site integrity with mitigation embedded.</p>
S6: Provision for sand and gravel extraction	<p>It is sufficient to rely on other policies, particularly Policy DM1, S10, S11 and S12 to ensure that this is considered appropriately.</p>	<p>There is no certainty of specific details and locations. Any minerals site being proposed that is not a Preferred Site must be able to demonstrate that they can avoid causing adverse effect on site integrity. This will need to be demonstrated through a project</p>	<p>No adverse effects on site integrity with mitigation embedded.</p>

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
		level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1, for this purpose, providing that DM1 is updated in line with the HRA's recommendations.	
S8: Safeguarding mineral resources and mineral reserves	It is sufficient to rely on other policies, particularly Policy DM1, S10, S11 and S12 to ensure that this is considered appropriately.	<p>There is no certainty of specific details and locations. Any minerals site proposed on safeguarded land arising from other surface development and being considered under Policy S8, must be able to demonstrate that it can avoid causing adverse effect on site integrity.</p> <p>This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ. It is sufficient to rely on other policies, particularly Policy DM1 for this purpose, providing that DM1 is updated in line with the HRA's recommendations.</p>	No adverse effects on site integrity with mitigation embedded.
S9: Safeguarding mineral transshipment sites and secondary processing facilities	Embed additional text within the supporting text for S9, in the section about Mineral Transshipment Sites: <u>Any proposals to create a transshipment site at Parkeston Quay at Harwich Port</u>	A new transshipment site at Parkeston Quay at Harwich Port would be within the existing port area. However, due to the close proximity of to the Stour Estuary SPA and Ramsar site it must be	No adverse effects on site integrity with mitigation embedded.

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
	<u>will require a project-level Habitats Regulation Assessment.</u>	ensured that any future proposals to create a transshipment site would not cause an adverse effect on integrity of the SPA or Ramsar site through its construction or long-term use, alone or in combination with other plans or projects, resulting from disturbance, water quality or air quality. A project-level Habitats Regulation Assessment will be required to demonstrate this.	
S11: Access and Transportation	It is not currently possible to recommend if any mitigation is needed for air quality impacts from the MLP either alone or in combination with other plans and projects.	Not applicable as further assessment is necessary.	The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.
S12: Mineral Site Restoration and After-Use	Embed additional text within the supporting text for S12, for example in Paragraph 3.205.	Preferred Site A31 Maldon Road, Birch is less than 2.5km from Abberton Reservoir SPA and	No adverse effects on site integrity with mitigation embedded.

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
	<p><u>Restoration proposals for sites situated within an IRZ 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. This is to avoid Adverse Effect on Integrity (AEOI) on those Habitats Sites, such as by preventing the encouragement of predation on protected species by gulls and crows.”.</u></p> <p>Update Clause I of S12 to include:</p> <p><u>Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided, either alone or in combination with other plans and projects,”</u></p>	<p>Ramsar site. There should be no landfilling of putrescible waste at A31, to prevent nest predation by gulls and crows that the waste may attract on the breeding cormorants (a qualifying feature of Abberton Reservoir SPA).</p> <p>Restoration proposals of other sites situated within any Impact Risk Zones (IRZ) should also avoid using putrescible waste or be able to need to demonstrate that the infilling will not result adverse effects on integrity through a project-level HRA.</p> <p>It should be clear that the restoration process or final outcome must not cause an adverse effect on integrity, e.g. through the process of importing waste to raise site levels, or by recreational use. In order to prevent any unknown adverse effects through site restoration of any future site, Policy S12 should clearly state that there should be no adverse on site integrity, either alone or in combination with other plans and projects.</p>	

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
P1: Preferred Sites for Sand and Gravel Extraction	Refer to text embedded in policies S10, S11, S12, DM1.	Refer to A31: Maldon Road, Birch	No adverse effects on site integrity with mitigation embedded.
A31: Maldon Road, Birch	<p>MLP to provide additional specific advice for Birch Quarry regarding the watercourse running through A31:</p> <p><u>A watercourse, leading ultimately to the Colne Estuary SPA and Ramsar site, runs through the middle of Preferred Site A31 at Birch Quarry and so careful consideration will need to be given to design, layout and phasing of the mineral site in order to protect the watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site.</u></p>	A31 is hydrologically connected and upstream of the Colne Estuary. A water course runs through the Site which ultimately feeds into the River Colne. Colne Estuary SPA and Ramsar are approximately 14km downstream. Careful consideration will need to be given to design, layout and phasing in order to protect the watercourse and ultimately water quality of the Colne Estuary SPA and Ramsar site. Specific advice regarding the watercourse running through A31 should be included within the MLP.	No adverse effects on site integrity with mitigation embedded.
B1: Slough Farm, Ardleigh	It is sufficient to rely on other policies, particularly Policy DM1, S10 and S12 to ensure that this is considered appropriately.	B1 is hydrologically connected and upstream of the Colne Estuary. This site is adjacent to a water course which has hydrological connection to Salary Brook which feeds into the River Colne. It is approximately 10km by travelling along the water courses from Colne Estuary SPA and Ramsar site. A project-level HRA will be required to demonstrate no AEOI.	No adverse effects on site integrity with mitigation embedded.

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
P2: Preferred Site for Silica Sand Extraction	It is sufficient to rely on other policies, particularly Policy DM1, S10 and S12 to ensure that this is considered appropriately.	Refer to B1 Slough Farm, Ardleigh	No adverse effects on site integrity with mitigation embedded.
DM1: Development Management Criteria	<p>5.15 Amend the following text: <u>“..... The Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.”</u></p> <p><u>A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites.</u></p> <p>Add the following text added to paragraph 5.41 (<i>Biodiversity and Geological Conservation</i>):</p> <p><u>“An assessment under the relevant Conservation of Habitats and Species Regulations, or its replacement, may be required to</u></p>	<p>Paragraph 5.15 in the transport section of the supporting text encourages the carrying of material by water and rail wherever possible for environmental reasons. However, it also needs to recognise that most of the coast is internationally designated and barges could cause disturbance, and a potential adverse effect on integrity.</p> <p>The need to avoid all adverse effects on the integrity of Habitats Sites is included within the supporting text of DM1, but it is not explicit within any policy of the MLP. The protection of Habitats Sites should be added to DM1 to ensure that any future proposals of any kind permitted through the MLP will avoid adverse effects on the integrity of any Habitats Sites, either alone or in</p>	No adverse effects on site integrity with mitigation embedded.

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
	<p><u>see if an 'Appropriate Assessment' is needed in relation to a Habitats Site. It must be ensured that there will be no adverse effect on integrity to these sites either alone or in combination with other plans and projects. A project-level Habitats Regulations Assessment will be needed for any sites not allocated in the MLP."</u></p> <p>Embed the following text to DM1:</p> <p><u>"Adverse effects on the integrity of internationally or nationally important wildlife sites must be avoided, either alone or in combination with other plans and projects.</u></p> <p><u>This must be demonstrated through a project level Habitat Regulation Assessment, which will be required for any future proposals requiring a decision under the MLP, which fall within an IRZ.</u></p>	<p>combination with other plans and projects. This is to ensure that unallocated minerals sites and supporting infrastructure and processes- e.g. aggregate recycling, primary or secondary processing and other transshipment sites- are considered appropriately, if they come forward within an IRZ.</p> <p>A new final section should be added to paragraph 5.41 (Biodiversity and Geological Conservation) to ensure that it is compliant with the legislation and guidance.</p>	
DM3: Primary Processing Plant	It is sufficient to rely on other policies, particularly DM1, S10, S11 and S12 to	Any new primary processing plant sites should avoid causing adverse effect on site integrity. This will	No adverse effects on site integrity with mitigation embedded.

Policy/Preferred Site	Mitigation (Amendment) Proposed	Rationale for Proposed Amendment	With proposed mitigation embedded, can adverse effects on integrity of the identified Habitats Sites be avoided?
	ensure that this is considered appropriately.	need to be demonstrated through a project level HRA for any sites that come forward within an IRZ.	
DM4: Secondary Processing Plant	It is sufficient to rely on other policies, particularly Policies DM1, S10, S11 and S12 to ensure that this is considered appropriately.	Any new secondary processing plant sites should avoid causing adverse effect on site integrity. This will need to be demonstrated through a project level HRA for any sites that come forward within an IRZ.	No adverse effects on site integrity with mitigation embedded.

7. Summary and Conclusion

- 7.1. This Habitats Regulations Assessment, which includes a Screening assessment and Appropriate Assessment, has considered the impacts arising from proposed changes to the Essex Minerals Local Plan 2014, which is currently undergoing its first five-year review.
- 7.2. The Habitats Regulations Assessment has been developed in discussion with Essex County Council, as the competent authority, and with Natural England. It updates the Habitats Regulations Assessment prepared by URS -entitled *Essex County Council Replacement Minerals Local Plan: Pre-Submission Draft -Habitats Regulations Assessment, November 2012* and ensures that the MLP is still compliant with up-to-date information and revised case law.
- 7.3. The 2012 HRA by URS screened out all policies and Preferred Sites. This updated HRA broadly concurs with the HRA from 2012 and should be read in conjunction with it. However, one significant difference is that, at the point in time that the 2012 HRA was written, it was able to consider mitigation at Screening stage. Since then the '*People over Wind*' ruling requires that any mitigation that might be required cannot be considered at screening stage. Therefore, policies that may have been screened out before, now needed to be screened in for further consideration at Appropriate Assessment.
- 7.4. Consequently, Likely Significant Effects on Habitats Sites resulting from the Essex Minerals Local Plan July 2014 (as amended in 2021) could not be ruled out for all policies and Preferred Sites during Screening at Stage 1 of the HRA.
- 7.5. Thus, the HRA proceeded to the second stage -Appropriate Assessment -where the HRA has undertaken a further assessment of the potential for adverse effects on the integrity of a Habitats Site, either alone or in combination with other plans or projects.
- 7.6. At the HRA Screening stage (Chapter 3), the Habitats Sites predicted to have Likely Significant Effect arising from Preferred Sites (without considering mitigation) were:
- Abberton Reservoir SPA and Ramsar
 - Blackwater Estuary SPA and Ramsar Colne Estuary SPA and Ramsar
 - Colne Estuary SPA and Ramsar
 - Epping Forest SAC
 - Essex Estuaries SAC
 - Hamford Water SPA, SAC and Ramsar
 - Stour and Orwell SPA and Ramsar.
- 7.7. There were a number of potential impacts upon Habitats Sites which could arise as a result of components of the Minerals Local Plan. The policies and Preferred Sites screened in for further assessment were:
- 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 transshipment 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

7.8. The above policies were considered against the following potential impact pathways at Appropriate Assessment, which were considered most likely to have the potential to cause an Adverse Effect on the Integrity of a Habitats Site.

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

7.9. The Recommendations section above sets out the HRA's recommendations to ensure that elements of the MLP that were screened in would avoid Adverse Effects on the Integrity of Habitats Sites, either alone or in combination with other plans and projects. Appendix 2 demonstrates the ways in which the MLP has been altered as a result of the iterative process of producing this HRA while the MLP was in the process of being updated.

7.10. With respect to **disturbance**, a key issue that was raised in the 2012 HRA was ensuring 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. This HRA continues to support the 2012 HRA and recommends that restoration proposals for minerals sites situated within an Impact Risk Zone 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. Appropriate text should be embedded into the MLP for Site A31 and Policy S12: Mineral Site Restoration and After-Use.

7.11. In addition to the putrescible waste issue, 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 sites coming forward through the MLP should not cause an adverse effect on site integrity through their restoration. The HRA recommends that the Policy S12 text is slightly updated for this purpose.

7.12. **Disturbance** and **water quality** were considered under Policy S9: Safeguarding mineral transshipment sites and secondary processing facilities, particularly the safeguarded land at Parkeston Quay at Harwich Port which is adjacent to the Stour and Orwell SPA and Ramsar site. If the Parkeston Quay transshipment site comes forward as a planning application, it would be situated within the existing land-based area of Harwich International Port. As it would be surrounded by other port infrastructure, 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 will need to be considered in a project-level HRA.

7.13. Two Preferred Sites were screened in with respect to potential **water quality** issues- i.e. 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 is sufficient for other policies to protect Site B1, it is recommended that additional specific advice is provided for Site A31 as the watercourse runs through the middle of it, and so careful consideration, planning, design and phasing will be required in order to ensure that water quality will not be affected downstream, and thereby will avoid adverse effects on integrity of any Habitats Site.

- 7.14. Policy S5: Creating a network of aggregate recycling facilities was also considered in the Appropriate Assessment. As it is not possible to fully to assess whether there could be any adverse effects on integrity, it is recommended that additional clarification should be included within the supporting text for Policy S5.
- 7.15. The MLP includes non-spatial policies and allows for sites to come forward in locations currently unknown in certain circumstances. This HRA therefore recommends that the protection of Habitats Sites should be added to Policy DM1: Development Management Criteria to ensure that any future proposals of any kind permitted through the MLP will avoid adverse effects on the integrity of any Habitats Sites, either alone or in combination with other plans and projects. This is to ensure that unallocated minerals sites and supporting infrastructure and processes- e.g. aggregate recycling, primary or secondary processing and other transshipment sites- are considered appropriately, if they come forward within an Impact Risk Zone.
- 7.16. There are no Preferred Sites close to (i.e. within 200 metres of) a Habitats Site, and major roads nearby tend to lead away from them. However, it was not possible to rule out a Likely Significant Effect on the grounds of **air quality** impacts resulting from the transportation of minerals from individual Preferred Sites as there was insufficient information to justify such a conclusion.
- 7.17. 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 SPA and Ramsar site and any vehicles passing to Suffolk may use this road over the Orwell Bridge. Therefore, air quality impacts from the MLP either alone or in combination with other plans and projects could not be ruled out at screening stage. It was considered that air quality impacts from individual Preferred Sites needed further assessment.
- 7.18. **Air quality** has been considered further as part of the Appropriate Assessment with respect to S11: Access and Transportation. The issue of air quality impacts needs further advice from Natural England to support an assessment of effects.
- 7.19. It is therefore not currently possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity from the MLP either alone or in combination with other plans and projects.
- 7.20. However, with respect to all other policies, this HRA can conclude that the changes proposed in the Recommendations section above are sufficient to ensure that the policies screened in can avoid adverse effects on site integrity, either alone or in combination with other plans and projects. Project-level HRAs will provide a means of checking for any further risks unforeseen at the Plan level, and for developing project-specific mitigation measures in greater detail.

8. References

Key sources for Habitats Sites information:

- JNCC: <http://jncc.defra.gov.uk/>
- Site Designation features and Conservation Objectives- Designated Sites View: <https://designatedsites.naturalengland.org.uk/>
- Site Improvement Plans, e.g.: <http://publications.naturalengland.org.uk/publication/6270737467834368>
- MAGIC (the Multi Agency Geographic Information website): www.magic.gov.uk
- “Managing Natura 2000 sites- The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC” http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_.nov_2018_endocx.pdf
- Impact Risk Zones: <https://data.gov.uk/dataset/5ae2af0c-1363-4d40-9d1a-e5a1381449f8/sssi-impact-risk-zones-england>

Essex County Council Replacement Minerals Local Plan: Pre Submission Draft -Habitats Regulations Assessment, November 2012 (URS)

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

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) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

<https://cieem.net/new-advisory-note-on-ecological-assessment-of-air-quality-impacts-published/>

Design Manual for Roads and Bridges (DMRB) (2018)

<http://www.standardsforhighways.co.uk/ha/standards/dmrbs/>

Highways Agency (2019) Design Manual for Roads and Bridges, LA 105 REV 0 Air Quality

<https://www.standardsforhighways.co.uk/dmrbs/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>

9. Appendices

Appendix 1: HRA Screening of Individual Policies

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and 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	Screen out. High-level underpinning policy aiming to ensure sustainable development at all times. No LSE predicted.
S2: Strategic priorities for minerals development	x	x	x	x	x	x	x	x	x	Screen out. High-level strategic policy about meeting the mineral supply needs of Essex whilst achieving sustainable development. Discussed in Policy S9.
S3: Climate change	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	Screen out. No LSE predicted.
S5: Creating a network of	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. It is not possible to conclude LSE without mitigation. May

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
aggregate recycling facilities										need project level HRA at application stage to ensure adequate mitigation is in place.
S6: Provision for sand and gravel extraction	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. It is not possible to conclude LSE without mitigation. May need a project level HRA at application stage to ensure adequate mitigation is in place.
S7: Provision for industrial minerals	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted.
S8: Safeguarding mineral resources and mineral reserves	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. No LSE predicted. It is not possible to conclude LSE without mitigation. Proposals may need a project level HRA at application stage to ensure adequate mitigation is in place.
S9: Safeguarding mineral transshipment sites	x	✓	x	x	x	✓	x	x	✓	Screen in. Proposals may need a project level HRA at application stage to ensure

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
and secondary processing facilities										adequate mitigation is in place. Potential for a marine wharf facility at Parkeston Quay (Harwich Port Authority), which is very near to Stour Estuary SPA and Ramsar.
S10: Protecting and enhancing the environment and local amenity	x	x	x	x	x	x	x	x	x	Screen out. Minor change to text is proposed. Considered to be sufficiently minimal to enable the screening out the policy and it could not cause LSE. 3.184 Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment.
S11: Access and Transportation	x	✓	✓	x	✓	x	✓	x	x	Screen in. Air quality needs project level HRA and trigger for requesting air quality assessments as part of planning applications. This is

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
										needed to determine whether this adequately protects Habitats Sites from air quality impacts.
S12: Mineral Site Restoration and After-Use	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. Uncertainties surrounding use of waste in restoration; potential disturbance issues from recreation; and air quality issues. It is not possible to conclude LSE without mitigation. Proposals may need a project level HRA at application stage to ensure adequate mitigation is in place.
P1: Preferred Sites for Sand and Gravel Extraction	✓	✓	✓	x	x	✓	x	x	x	Screen in. This Policy includes a list of Preferred Sites, some of which are screened in. See below.
A6 & A7: Bradwell Quarry, Rivenhall (extension)	x	x	x	x	x	x	x	x	x	Screen out. Hydrological connectivity but no LSE due to distance from Habitats Sites.

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
A20: Sunnymead, Alresford	x	x	x	x	x	x	x	x	x	Screen out. A planning application has been granted (ESS/17/18/TEN). Project-level HRA screened out all potential effects as adequate measures were built into the development.
A22 & A23: Little Bullocks Farm, Little Canfield	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted. No hydrological connectivity between these sites and closest Habitats Site, i.e. Lee Valley SPA and Ramsar
A31: Maldon Road, Birch	✓	x	✓	x	x	✓	x	x	x	Screen in. Water quality, air quality and disturbance. A water course runs through the Site which feeds into the Roman River, which feeds into the River Colne. Possibility of Putrescible waste- disturbance to breeding cormorants.

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
										Possible air quality issues during transportation to and from site.
A40: Shellows Cross, Roxwell / Willingale	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted. Water quality. Hydrological connectivity to the Blackwater Estuary. However, approximately 23km upstream of the SPA and Ramsar and so it is considered a sufficient distance to avoid LSE and screen out.
B1: Slough Farm, Ardleigh	x	x	✓	x	x	✓	x	x	x	Screen in. Water quality. Hydrological connection to River Colne via Salary Brook.
P2: Preferred Site for Silica Sand Extraction	x	x	✓	x	x	✓	x	x	x	Screen in. This policy includes the only Preferred silica sand Site- i.e. B1: Slough Farm, Ardleigh

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
DM1: Development Management Criteria	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. Policy needs strengthening. It is not possible to conclude LSE without mitigation.
DM2: Planning Conditions and Legal Agreements	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted
DM3: Primary Processing Plant	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screen in. No 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.
DM4: Secondary Processing Plant	✓	✓	✓	✓	✓	✓	✓	✓	✓	Screened. No 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.

Policy	Abberton Reservoir SPA and Ramsar	Blackwater Estuary SPA and Ramsar	Colne Estuary SPA and Ramsar	Dengie SPA and Ramsar	Epping Forest SAC	Essex Estuaries SAC	Hamford Water SPA, SAC and Ramsar	Lee Valley SPA and Ramsar	Stour and Orwell SPA and Ramsar	Will Policy have Likely Significant Effect (LSE) on the Habitats Sites without mitigation? Screen in/out?
IMR1: Implementation, Monitoring and Review	x	x	x	x	x	x	x	x	x	Screen out. No LSE predicted

Appendix 2

Appendix 2: Ongoing communication with ECC Minerals Team

Policy/element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
S5: Creating a network of aggregate recycling facilities	<p>Embed additional text into policy S5 / supporting text to ensure that any new aggregate recycling sites avoid causing AEOL.</p> <p><u>“Any new aggregate recycling sites 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.”</u></p>	<p>Policy S5 supporting text will be update to include the following <u>“Any new aggregate recycling sites 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 Habitat Regulations Assessment, which will be required for any new aggregate recycling sites which fall within an Impact Risk Zone (IRZ).”</u></p>	<p>This meets the HRA’s recommendation.</p> <p>No adverse effects on site integrity with mitigation embedded.</p>

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<p><u>This must be demonstrated through a project level Habitat Regulation Assessment, which will be required for any new aggregate recycling sites which fall within an IRZ.”</u></p>		
<p>S10: Protecting and enhancing the environment and local amenity</p>	<p>This is a general plan-wide high-level aspiration and most of it can be screened out. It was screened out in the 2012 HRA.</p> <p>However, the MLP 2021 refers to mitigation within the policy and has added additional supporting text about the Habitats Regulations. This only deals with air quality and should be wider-ranging to encompass any potential LSE.</p> <p>3.184 (page 93) “<i>Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment. Currently where a proposal would result in an increase of 200 daily HGV movements within 200m of a Natura</i></p>	<p>Paragraph 3.169 will be updated as follows “Any proposals for mineral development will be expected to show compliance with the relevant Habitat Regulations through completion of a Habitats Regulations Assessment. Currently where a proposal would result in an increase of 200 daily HGV movements within 200m of a Natura 2000 site <u>a Habitats Site</u> it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal.”. Reference to Natura 2000 has been removed from the Glossary.</p>	<p>This meets the HRA’s recommendation. No adverse effects on site integrity with mitigation embedded.</p>

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<i>2000 Habitats Site (including Ramsar sites) it will be required to undertake and submit an air quality analysis compliant with Environment Agency guidelines as part of the proposal.”</i>		
S11: Access and Transportation	The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.	Awaiting meeting with Natural England to discuss this issue.	The issue of air quality impacts needs further advice from Natural England to support assessment of effects on Habitats Sites within scope of the Appropriate Assessment. It is therefore not possible to reach a conclusion on whether the Essex Minerals Local Plan July 2014 (as amended in 2021), can avoid any adverse effect on integrity on any Habitats Sites, either alone or in combination with other plans and projects.
S12: Mineral Site Restoration and After-Use	This is a general plan-wide high-level aspiration and most of it can be screened out.	Paragraph 3.189 will be amended to include the following “ <i>Restoration proposals for sites situated within an IRZ for Habitats Sites should avoid using</i>	This meets the HRA’s recommendation.

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<p>Additional safeguards were proposed in the 2012 HRA in relation to Maldon Road, Birch and Sunnymead, Alresford with respect to avoidance of putrescible waste.</p> <p>Details for the Sunnymead, Alresford have already been submitted and been approved, subject to the details of the S106. This site will receive inert waste only. A project-level HRA has screened out all LSE.</p> <p>No details have been submitted for Maldon Road, Birch and so it is unknown, but possible, that waste could be imported as a result of the MLP changes in 2021. Mitigation has not been embedded into the MLP 2014.</p> <p>INSERT INTO SUPPORTING TEXT: <u>Putrescible waste used for restoration needs to be avoided for Maldon Road, Birch and any windfall sites within the Impact Risk Zones of</u></p>	<p><u>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. This is to avoid Adverse Effect on Integrity (AEOI) on those Habitats Sites, such as by preventing the encouragement of predation on protected species by gulls and crows.”</u></p> <p>A definition of AEOI has been added to the Glossary of the MLP <u>“The coherence of the ecological structure and function of a Habitats Site which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species.”</u>.</p> <p>Clause I of Policy S12 has been updated to read “Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided, <u>either alone or in combination with other plans and projects;</u>”</p>	<p>No adverse effects on site integrity with mitigation embedded.</p>

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<p><u>Habitats Sites to avoid AEOI by preventing encouraging predation by gulls and crows.</u></p> <p>S12 (i): makes specific reference to AEOI. However, in order to be fully legally compliant, the following underlined phrase should be added:</p> <p><i>“Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided”</i></p> <p><u>INSERT TEXT: Either alone or in combination with other plans and projects</u></p>		
DM1: Development Management Criteria	<p>This is a specific policy intended to avoid or reduce harmful effects on a Habitats Site. It was screened out by the 2012 HRA.</p> <p>Transport</p> <p>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</p>	<p>Paragraph 5.15 will be updated to state that “The transportation of minerals can potentially lead to substantial adverse impacts on the local environment. “For example, <u><i>the Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.</i></u>”.</p> <p>Paragraph 5.16 will be amended to include the following “<u><i>A transport assessment may need to</i></u></p>	<p>This meets the HRA’s recommendation.</p> <p>No adverse effects on site integrity with mitigation embedded.</p>

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<p>barges could cause disturbance, and a potential LSE.</p> <p>The following text should be amended:</p> <p>“... enable the carrying of material by water and rail wherever possible. <u>The Essex coast is internationally designated for sensitive wildlife and habitats and proposals shall be required to be supported by an ecological assessment of potential impacts to avoid adverse effects on the integrity of these sites.</u></p> <p>5.4 “a transport assessment of potential impacts. This should include the movement of minerals within and outside the site, emissions control, energy efficiency and local amenity including impacts on highways safety and congestion.”</p> <p>We believe that the following text probably need to be inserted, but this</p>	<p><u>include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites.”</u></p> <p>Paragraph 5.17 will be amended to state “Minerals development can cause concern to residents, and local communities <u>and the environment</u> because of noise, dust, fumes, vibration, illumination and debris on the highway from vehicle movements.</p> <p>The list in paragraph 5.19 will be amended to states, “The proximity of proposed development to homes, schools, <u>Habitats Sites</u> and other sensitive and incompatible land-uses,”.</p> <p>A new final sentence has been added to paragraph 5.41 as follows “<u>It must be ensured that there will be no adverse effect on integrity to these sites either alone or in combination with other plans and projects. A project-level Habitats Regulations Assessment will be needed for any sites not allocated in the MLP.”</u></p>	

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<p>needs more consideration (at AA stage):</p> <p><u>A transport assessment may need to include an assessment of potential air quality impacts to avoid adverse effects on the integrity of Habitats Sites.</u></p> <p>Pollution and Amenity impacts 5.7 Factors to be taken into account</p> <p>This list should include: <u>Proximity to Habitats Sites.</u></p> <p>Policy DM1 does not include specific text to ensure that Preferred Sites and any sites not allocated would not create any adverse effect on integrity. We recommend adding the following text to part 12 of DM1.</p> <p><u>“It must be ensured that there will be no adverse effect on integrity to Habitats Sites either alone or in combination with other plans and projects. A project-level Habitats</u></p>		

Policy/ element of MLP 2021	Mitigation (Amendment) Proposed	Policy Team Comments	Ecology Team comments
	<u>Regulations Assessment will be needed for any sites not allocated.”</u>		
A31: Maldon Road, Birch	<p>MLP to provide additional specific advice for Birch Quarry regarding the watercourse running through A31:</p> <p><u>A watercourse, leading ultimately to the Colne Estuary SPA and Ramsar site, runs through the middle of Preferred Site A31 at Birch Quarry and so careful consideration will need to be given to design, layout and phasing of the mineral site in order to protect the watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site.</u></p>	<p>A new criterion will be added to the Site Profile for A31 Maldon Road, Birch to state “<u>A watercourse, leading ultimately to the Colne Estuary SPA and Ramsar site, runs through the middle of the site, so careful consideration will need to be given to design, layout and phasing in order to protect the watercourse from pollution and avoid adverse effect on the integrity of the Colne Estuary SPA and Ramsar site.</u>”.</p>	<p>This meets the HRA’s recommendation. No adverse effects on site integrity with mitigation embedded.</p>

Appendix 3

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

Please see separate attachment