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Essex Replacement Minerals Local Plan: Pre-Submission Draft

Sustainability Appraisal and Strategic Environmental Assessment

Environmental Report

November 2012

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Glossary of Acronyms

ANGSt	Accessible Natural Greenspace Standards
AMR	Annual Monitoring Report
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
C&D	Construction and Demolition
CDEW	Construction and Demolition and Excavation Waste
dB	Decibel
EA	Environment Agency
EC	European Community
ECC	Essex County Council
EHHER	Essex Historic Environment Record
GWh	Gigawatts
HGV	Heavy Goods Vehicle
HRA	Habitat Regulations Assessment
LAA	Local Aggregate Assessment
LCA	Landscape Character Area
LDF	Local Development Framework
LNR	Local Nature Reserve
LoWS	Local Wildlife Site
LSOA	Local Super Output Area
LTP3	Local Transport Plan 3
MCA	Mineral Construction Areas
MLP	Minerals Local Plan
MPA	Minerals Planning Authority
MSA	Mineral Safeguarding Area
Mt	Million tonnes
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
ODPM	Office of Deputy Prime Minister
PAS	Planning Advisory Service
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
PROW	Public Rights of Way
PSA	Public Service Agreement
RSS	Regional Spatial Strategy
SA	Sustainability Appraisal
SA/SEA	Sustainability Appraisal incorporating Strategic Environmental Assessment

SAC	Special Area of Conservation
SARS	Strategic Aggregate Recycling Sites
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SO	Sustainability Objectives
SPA	Special Protection Area
SSSI	Site of Specific Scientific Interest
UA	Unitary Authority

1 Introduction and Methodology

1.1 Background

Essex County Council commissioned Place Services (formerly part of Essex County Council's Spatial Planning Group) to undertake a Sustainability Appraisal, incorporating Strategic Environmental Assessment (SA/SEA), on the proposed Replacement Minerals Local Plan: Pre-Submission Draft.

Place Services are acting as consultants for this work; therefore the content of the SA/SEA should not be interpreted or otherwise represented as the formal view of Essex County Council.

This Report sets out the SA/SEA undertaken for the preparation to date on the Replacement Minerals Local Plan: Pre-Submission Draft hereafter referred to as the 'Minerals Local Plan' or 'MLP'.

1.2 The Replacement Minerals Local Plan: Pre-Submission Draft

Essex County Council is the local planning authority for minerals and waste planning for the County of Essex. The County Council has a statutory responsibility to plan for future minerals supply and waste management under the Planning and Compulsory Purchase Act 2004.

It is fulfilling this responsibility by preparing separate Minerals and Waste Local Plans to support the achievement of sustainable development within the County.

This Environmental Report has been prepared to document the SA/SEA undertaken throughout the Minerals Local Plan's preparation up to the Pre-Submission version.

The Replacement Minerals Local Plan: Pre-Submission Draft contains:

- The Spatial Portrait and Key Issues for the County.
- The Plan's Strategy which sets out the key policy principles.
- The Site Specific Proposals.
- Development Management Policies which set out the criteria against which planning applications for minerals development will be considered.
- Implementation, Monitoring and Review proposals.

1.3 Sustainability Appraisal and Strategic Environmental Assessment

The requirement for Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) emanates from a high level national and international commitment to sustainable development. The most commonly used definition of sustainable development is that drawn up by the World Trade Commission on Environment and Development in 1987 which states that sustainable development is:

'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

The European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment" (the 'SEA Directive') was adopted in June 2001 with a view to increase the level of protection for the environment, integrate environmental considerations into the preparation and adoption of plans and programmes and to promote sustainable development.

It requires a Strategic Environmental Assessment to be carried out for all plans and programmes which are:

'subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and required by legislative, regulatory or administrative provisions'.

The few exceptions are detailed in Article 3 (8, 9) of the SEA Directive. The aim of the SEA is to identify potentially significant environmental effects created as a result of the implementation of the plan or programme on issues such as

'biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors'

as specified in Annex 1(f) of the Directive. The Directive was transposed into English legislation by the Environmental Assessment of Plans and Programmes Regulations 2004, which came into force on 21 July 2004.

Sustainability Appraisals examine the effects of proposed plans and programmes in a wider context, taking into account economic, social and environmental considerations in order to promote sustainable development. They are mandatory for all Development Plan Documents in accordance with the Planning and Compulsory Purchase Act 2004 as amended.

Whilst the requirements to produce a Sustainability Appraisal and Strategic Environmental Assessment are distinct, Government guidance considers that it is possible to satisfy the two requirements through a single approach providing that the requirements of the SEA Directive are met.

1.4 Progress to Date

With regard to the MLP, three separate Minerals Issues and Options papers were published for consultation in December 2005 (Core Strategy, Development Control Policies and Site Allocation Papers). A further Site Allocations Issues and Options Paper was published in March 2006. In late 2007 the approach was reviewed to merge the Core Strategy, Development Management Policies and Strategic Site Allocations into one document. A single Further Issues & Options Paper went out for consultation in January 2009. A subsequent additional sites Issues and Options paper went out on public consultation in August 2009. This was then followed by the Preferred Approach document, incorporating the policies and site allocations, in December 2010. In August 2011 a further site allocations Issues and Options paper was published for consultation.

Work on the MLP has been underway for some time, and the SA/SEA process has been an integral part of the production. SA/SEA work was initially undertaken by Essex County Council, then, continued by Eunomia, until being brought back in-house in 2009.

Previous documents produced as part of the SA/SEA process include:

- Original Scoping Report, 2005
- Revised Scoping Report (Eunomia), June 2008
- Minerals Local Plan: Issues and Options. First Stage Environmental Report (Eunomia), January 2009
- Environmental Report December 2010
- SEA Statement on Additional Sites August 2011

These documents have all been made publically available and have been published on the Essex County Council website.

1.5 Methodology

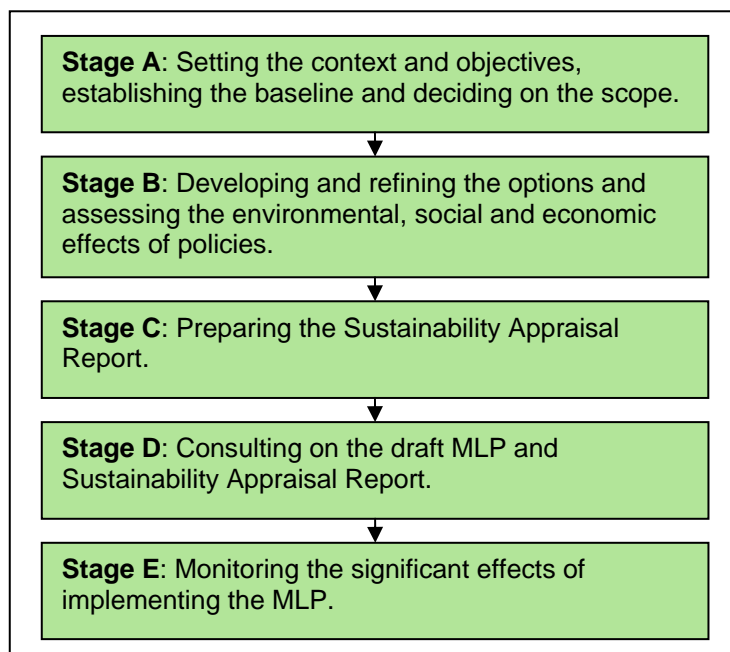
The methodology adopted for the SA/SEA of the MLP seeks to meet the requirements for both SA and SEA. It has been prepared in accordance with the following documents,

- The European Directive 2001/42/EC (EC, 2001)
- A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, 2005)
- Sustainability Appraisal of Regional Spatial Strategies and Local Development Frameworks (ODPM, 2005)
- Local Development Frameworks – Guidance on Sustainability Appraisal (PAS, 2007)

- The Plan Making Manual (PAS online guidance available at: www.pas.gov.uk)

The appraisal of the document has been conducted in accordance with the guidance as part of a five stage process as outlined in Figure 1 below.

Figure 1: Stages of the Sustainability Appraisal and Outputs



1.6 The Aim and Structure of this Report

This report sets out the SA/SEA that has been undertaken for the MLP. This document summarises the entire SA/SEA process to date, and is intended to be a stand alone document.

Table 1 signposts the relevant sections of this report that represent the required content of an Environmental Report as outlined within the SEA Directive.

Table 1: The Environmental Report Requirements

SEA Regulations – required content of Environmental Report	Covered in this Report
An outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes.	Sections 1.2, 2.2 and Annex A
The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Section 2.3 and Annex B
The environmental characteristics of areas likely to be significantly affected.	Section 2.3 and Annex B
Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive.	Section 2.3 and Annex B

SEA Regulations – required content of Environmental Report	Covered in this Report
The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Annex A
The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above issues.	Section 4-8
The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Sections 4-8
An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Sections 4-8
A description of the measures envisaged concerning monitoring.	Section 10.1 and Annex C
A non-technical summary of the information provided under the above headings.	Separate Non Technical Summary

2 Sustainability Context, Baseline and Objectives

2.1 Introduction

The following section outlines an updated version of the key findings of the Scoping Stage and published Scoping Report which includes an outline of the plans and programmes, the baseline information profile for the plan area, together with the Sustainability Objectives formulated as a result of the Scoping Stage.

2.2 Plans & Programmes

Annex A details the full list of plans and programmes which were included within the 2008 Scoping Report. The original list has been updated in the light of changes in legislation and updates to publications, the key change relates to the implementation of the National Planning Policy Framework and subsequent replacement of PPGs and PPSs.

Table 2 outlines the key list of plans and programmes.

Table 2: Plans and Programmes

International
The Johannesburg Declaration on Sustainable Development, 2002
Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe, 2008
Directive 2006/21/EC on the Management of Waste from Extractive Industries, 2006
Directive 2000/60/EC Water Framework Directive, 2000
Directive 2006/118/EC Groundwater Directive, 2006
Directive 1992/43/EC on the Conservation of Natural Habitats and of Wild Fauna and Flora, 1992
European Convention on the Protection of the Archaeological Heritage (Revised) 16/1/1992
Kyoto Protocol and the UN Framework Convention on Climate Change 1992
National
National Planning Policy Framework, March 2012
Technical Guidance to the National Planning Policy Framework, March 2012
Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners
UK Climate Projections (UKCP09) June 2009
The Countryside and Rights of Way Act 2000
Safeguarding our Soils: A Strategy for England 2009
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007
Air Pollution: Action in a Changing Climate, 2010
Securing the Future – UK Government Sustainable Development Strategy, 2005
The Conservation of Habitats and Species Regulations, 2010
Regional
East of England Plan May 2008
Draft RSS Submission March 2010 and accompanying SA/SEA report
SEA of Revocation of East of England Regional Strategy (July 2012)

Sustainable Futures: Integrated Sustainability Framework for the East of England (January 2009)
East of England Regional Social Strategy 2007
Inventing our Future: Collective Action for a Sustainable Economy (East of England Regional Economic Strategy) 2008 - 2031
County
The Essex Local Area Agreement – ‘Health and Opportunity for the People of Essex’ 2008 – 2011 (2010 Refresh)
Essex Rural Strategy: 2020 Vision for Rural Essex 2010
Essex Local Transport Plan 2011 (LTP3)
Essex Minerals Local Plan 1996 (and saved policies Direction)
Essex and Southend-on-Sea Waste Local Plan (and saved policies Direction) 2001
Essex Biodiversity Action Plan 2011
The Essex Strategy 2008 – 2018
Essex Landscape Character Assessment 2005
Landscape Character Assessment of the Essex Coast
Essex Climate Change Strategy 2005
Minerals Local Plan Level 1 Strategic Flood Risk Assessment, 2012
Habitat Regulations Assessment for Minerals Local Plan –Submission Document, 2012
Braintree, Brentwood, Chelmsford, Maldon and Uttlesford Landscape Character Area Assessment 2006
District / Borough
Basildon’s Sustainable Community Strategy 2008 – 2033
District of Tomorrow – A Community Strategy for Braintree District 2002
Brentwood Community Strategy 2004-2009
A Sustainable Community Strategy for Castle Point 2007-2021
One Vision : Chelmsford Tomorrow 2021
Colchester 2020 – Colchester’s Sustainable Community Strategy 2007
Epping Forest District Community Strategy 2004 - 2021
Harlow 2020 Vision 2011-2020
Facing the Future: the Sustainable Community Strategy for the Maldon District to 2015
Rochford Sustainable Community Strategy 2009 - 2021
A Sustainable Community Strategy for Tendring
Uttlesford Sustainable Communities Strategy – A Vision for Our Future 2018
Basildon District Local Plan Saved Policies 2007
Braintree District Core Strategy 2011
Adopted Brentwood Replacement Local Plan 2005
Adopted Castle Point District Local Plan Saved Policies 2007
Chelmsford Borough Council Core Strategy and Development Control Policies Document 2008
Colchester Borough Council Core Strategy 2008

Adopted Epping Forest District Local Plan 1998 and Local Plan Alterations 2006
Adopted Harlow Borough Council Replacement Local Plan 2006
Adopted Maldon District Local Plan 2006
Rochford District Core Strategy 2011
Adopted Tendring District Local Plan 2007-2011
Adopted Uttlesford District Local Plan 2005

2.3 Baseline Information / Key Sustainability Issues

Annex B details the complete Baseline Information profile for the plan area, and is based on the information which was highlighted as relevant through the Scoping Reports, together with relevant new data sources which have become available since the consultation on the last Scoping Report.

The following section summarises that information contained in Annex B.

2.3.1 Profile of Essex

The County of Essex covers an area of 3,694.8km² and comprises twelve District and Borough Councils: Harlow; Uttlesford; Braintree; Colchester; Tendring; Maldon; Chelmsford; Rochford; Castle Point; Basildon; Brentwood and Epping Forest. Essex adjoins the Unitary Authority (UA) of Southend-on-Sea, which covers an area of 67.8km² and Thurrock which is 165.7 km².

Essex is the most populated County in the East of England Region, with a population of approximately 1,398,900 (Office of National Statistics 2009 Mid-Year Estimates). Despite having a relatively high population density, approximately 30% of the population live in rural areas.

2.3.2 Minerals

- Sand and gravel is by far the most common extracted mineral in the country. Essex is a nationally significant exporter of sand and gravel and is one of the largest producers in the UK. Sand and gravel deposits are largely concentrated in the north of the county and particularly in the districts of Uttlesford, Braintree, Colchester, Tendring and Chelmsford. Sand and gravel deposits are far less abundant in the south of Essex and are less workable. Whilst there are many sand and gravel sites throughout Essex, other minerals such as silica sand, brick clay and chalk are extracted at either one or two sites in the county, namely in Colchester, Bulmer and Marks Tey, and Uttlesford.
- As of August 2012, there were 23 sand and gravel sites with a further four sand and gravel quarries which have permission to extract but are currently dormant. Permitted reserves in Greater Essex in 2011 estimated 2.80 million tonnes (mt) with total permitted reserves estimated at 37.642mt. One of these sites also produces silica sand. In addition to this in Greater Essex there are two brick clay sites and one chalk site although commercial confidentiality precludes the stating of their total permitted reserves. Regarding operational transshipment sites, there are 2 wharfs and 4 rail depots in the County.
- According to the British Geological Survey and 'Collation of the results of the 2009 aggregate minerals survey for England and Wales' over 90% of the land won sand and gravel consumed in Greater Essex was extracted within Greater Essex. Crushed rock does not however exist in Greater Essex and as a result it is imported from elsewhere with the largest proportion coming from Somerset. The majority of all aggregate extracted from Greater Essex served local markets within Greater Essex. 8% was exported elsewhere in the East of England and 14% was exported further a field.
- The soon to be abolished East of England Plan (the RSS for the region) set out planned mineral provision through sub-regional apportionments, in average tonnes of land won minerals, to be extracted per annum up to 2016. Whilst a figure of 4.41mtpa

was originally quoted for Essex, rising to 4.55mpta for Essex, Southend and Thurrock, the figures have subsequently been revised by the Regional Aggregates Working Party to 4.31mpta (a reduction of 2%) for Essex and 4.45mpta for Greater Essex.

- The amount of mineral to be provided annually is, according to the NPPF, to be based primarily on a rolling ten year local sales average. The sales of sand and gravel within Greater Essex over the last 10 year period have reported a general declining trend with the largest fall in sales occurring between 2007 and 2008. This is strongly related to the economic recession. The annual apportionment has historically been higher than actual sales of sand and gravel but this was due to delays in plan formation at the national level. Before 1991 sales of sand and gravel in Greater Essex were around 8mtpa and historic apportionments closely corresponded to actual sales. The reduction of the Greater Essex apportionment to 4.55mpta in 2003 closely mirrored sales of sand and gravel again until the aforementioned economic recession which caused sales to fall considerably.
- It is important to acknowledge that most of the existing mineral sites will be exhausted by the end of the plan period (2029) if they continue to operate at their average output as quoted on their planning application. By 2029, those remaining active sites would be in the north-east of Greater Essex, leaving many parts of the area outside of the economically viable reach of an active mineral site.
- There are 35 aggregate recycling facilities in Essex and Southend-on-Sea, approximately 60% of which provide permanent capacity with the remaining proportion being located in temporary facilities on existing minerals sites. The total permitted capacity of all these sites, according to the *Essex County Council and Southend-on-Sea Borough Council Capacity Gap Report Update – Revised 2011*, is 1,737,992t. 28 of these facilities are operational and account for approximately 79% of the total capacity. However due to the future closing of the temporary facilities a ‘capacity gap’ is expected from 2020/21 between the available capacity to recycle and the volume of CDE waste which must be recycled. To address this, additional CDE recycling facilities will be needed within Essex and Southend-on-Sea.

2.3.3 Waste Management

- In 2011 there were a total of 299 waste management facilities within Essex. These consisted of 110 waste transfer facilities; 99 Recycling Sites; 14 Composting Facilities; 32 C&D Recycling Facilities; 20 Waste Treatment Sites; 9 Energy from Waste Facilities; and 15 Landfill Sites. There were 10 new waste management facilities approved between 1 April 2010 and 31 March 2011. According to the most recent Annual Monitoring Report the new facilities have created an additional 0.247mtpa recycling and composting capacity and a total landfill disposal capacity of 3.287mt.
- Essex currently has existing capacity to manage all types of waste (municipal, commercial, industrial and construction/demolition wastes), including recycling and composting capacity, and inert and non-hazardous landfill void space. The majority of predicted waste arisings are anticipated to come from construction and demolition (C&D) at approximately 50% of the total waste produced, followed by commercial and industrial activities. Municipal waste is predominantly from households and is expected to make up approximately 20% of total waste produced. In 2010/11 nearly 50% of household waste in Essex was sent to landfill, with 30% recycled and 20% composted.
- Construction and Demolition waste arising in Essex made up 24.3% of the total amount of C&D waste created in the East of England in 2007 with the equivalent figure for Southend-on-Sea being 3%. In both cases the majority of this waste came from the complete demolition of existing sites. The majority of these facilities are those which process inert and non-inert C&D waste.
- Potential sources of construction waste correspond to 5 Priority Areas for Regeneration within Essex County Council’s administrative area and are located at Harlow, Basildon, Colchester, Clacton-on-Sea and Harwich. It could be perceived that there is a potential

lack of facilities within sustainable locations in Essex to receive C&D waste from Harlow. Further sources of construction and demolition wastes occur at existing urban centres, disused airfields, in examples of road removal and maintenance and there may possibly be small amounts of imported C&D waste as a result of London Olympics 2012 re-development. There are 4 sites that have been permitted for C&D recycling (1 in Braintree, 1 in Chelmsford, 1 in Harlow and 1 in Tendring) but are not yet receiving waste.

- There is currently a potential 1.36mtpa of C&D recycling capacity per annum. The only current projection for inert waste arisings is in the soon to be abolished RSS and this suggests there will be approximately 2mtpa of inert waste arising within Essex and Southend-on-Sea. The RSS required a 90% diversion of this waste stream from landfill by 2031. A progressive increase in capacity is required in C&D recycling facilities to nearly 1.67mtpa to achieve this. The result is that by 2031 an increase in capacity of 0.31mtpa is required.

2.3.4 Cultural Heritage

- The total number of listed buildings or groups of buildings in England is over 377,000 and in Essex there are around 13,000. Grade I buildings are of exceptional interest, sometimes considered to be internationally important. Only 1.9% of all listed buildings in Essex are Grade I. 5.3% have been designated as Grade II* buildings which are particularly important buildings of more than special interest and the rest are Grade II listed which means they are nationally important and of special interest.
- There is a fairly even distribution of listed buildings within Essex; however there is a greater concentration to the north particularly in the districts of Uttlesford and Braintree and also around historic towns such as Colchester.
- There are over 36,000 records of archaeological sites and finds, recorded on the Essex Historic Environment Record (EHER) for the county. The archaeological deposits range in date from the Palaeolithic, through to structures related to the Cold War. Archaeological sites (and their setting) constitute a finite, non-renewable resource, vulnerable to damage.
- There are 279 SMs in Essex, ranging from prehistoric burial mounds to unusual examples of World War II defensive structures.
- Essex currently has 193 designated Conservation Areas. The objective of the Conservation Area designation is to ensure that the character of the defined area is preserved from developments which do not preserve or enhance its character.
- There are currently 38 historic parks and gardens in Essex. Of the 38, six have been graded II* and one, Audley End, has been awarded grade I status which is the highest quality.
- There is one registered battle site within Essex, located at Northey Island in the Blackwater Estuary. The battlefield site is situated within a number of designations: the Coastal Protection Belt, Special Landscape Area and a SSSI.

2.3.5 Landscape

- Within the Essex landscape there are many areas of special interest which have been designated and protected from inappropriate development. The scale and location of mineral facilities and activities will have to adhere to such landscape interest, being either unsuitable for development in certain areas, requiring mitigation to offset any negative impacts, or proven that the benefits of facilities at certain locations outweigh the loss of landscape amenity.
- There are significant areas of Grade 1 agricultural land within Tendring and Rochford Districts, and smaller areas within Maldon District and Colchester Borough. The majority of agricultural land within Essex can be broadly classified as Grade 2 in the north and Grade 3 to the south. Much of Harlow District is classified as an urban area,

and to a lesser degree so too is Basildon District and Castle Point Borough. Low grade, undesignated non-agricultural and underused agricultural land would be preferable for the location of new strategic mineral facilities.

- The Essex Landscape Character Assessment (Chris Blandford Associates, 2003) is based on the Countryside Agency's guidance, and establishes a 'baseline' of the existing character of the Essex landscape. The assessment involved a broad review of the landscape identifying 35 'Landscape Character Areas' (LCAs) within Essex. They are areas with a recognisable pattern of landscape characteristics, both physical and experiential, that combine to create a distinct sense of place. Further to the Landscape Character Assessment carried out in 2003 and the coastal character assessment in 2005, a number of Essex districts, namely Braintree, Brentwood, Chelmsford, Maldon and Uttlesford, underwent a combined Landscape Character Assessment in 2006. This report divides the County's Landscape Character Areas into a further twenty-two smaller local Landscape Character Areas. This information can be used to determine the sensitivity of certain landscapes and areas to development and can be utilised in the appraisal of new mineral management sites.
- In Essex there is one AONB called Dedham Vale which lies on the border of Suffolk and Essex covering an area of 90 sq km. Due to the location of Dedham Vale and the small area of land in the County currently under this designation, it can be seen as unlikely that new mineral sites will negatively impact on any AONB.
- The largest green belt within the UK is the Metropolitan Green Belt around London which includes a large area of land in Essex. It is protected by planning policies within Local Plans which enforce restrictions on certain development within the designated area. There are 8 local authorities in the plan area that have land classified as being within the Metropolitan Green Belt. The largest amounts are in Epping Forest and Brentwood.
- Protected lanes have significant historic and landscape values and there are a number within Essex. The volume weights and speed of traffic is often limited to preserve the special character and due to their age and use they also have great biological value. This would distance their use as access routes for mineral related vehicles.
- Roadside Verges are important and if sensitively managed they can increase the biodiversity of the verges themselves and from that the surrounding countryside. The reason for this is that verges can act as corridors interlinking fragmented or isolated habitats. They aim to protect the future of rare and uncommon flowers growing on them. As such, access routes for mineral related vehicles should seek to deviate away from these verges. There are over 100 special verges designated in Essex.

2.3.6 Biodiversity

- Essex is predominantly rural in character with a diverse wildlife. Conservation of sites and designations of biodiversity value have an important role within the planning process, land management, and controlling development pressure. Mineral management facilities and related activities need to respond to these designations in scale, location and any associated impacts that could affect biodiversity, flora and fauna.
- The Essex Biodiversity Action Plan (EBAP) is currently being re-written at the time of compiling this baseline, and the original 1999 Action Plan is now withdrawn. A sub-group was formed in May 2006 to review the species and habitats of Essex Biodiversity Action Plan and to revise the format. The new format will include targets and actions are intended to be realistic and achievable. Habitat groups have been formed to frame the review process: Lowland Grassland, Lakes and Ponds, Rivers, Wetlands, Coastal, Marine, Urban and Brownfield. Each Group will contain sub-plans for more specific habitats. There will be no Species Action Plans as species will be addressed within the habitats where they are found.

- The species in the Red Data Books are found in a number of different types of areas across Essex. Hotspots include the Stour Estuary; in the Epping Forest and Lee Valley region; the Dagnam Park, South Weald, Navestock, Weald Park and Curtismill Green area; the Stort Valley and Hatfield Forest; Hylands Park; the Danbury Ridge; Halstead and Sible Hedingham area. Brownfield sites are also considered important, particularly in the Thames Gateway where many Red Data Book, Nationally Scarce and Essex Red Data species have been recorded. Such sites are also home to species on the UK BAP such as the Shrill Carder Bee *Bombus sylvarum*, the Brown-banded Carder Bee *Bombus humilis*, the picture winged fly *Dorycera graminum*, the solitary wasps *Cerceris quinquefasciata* and *C. quadricincta* and the ground beetle *Anisodactylus poeciloides*.
- Ramsar sites are wetlands of international importance designated under the Ramsar Convention which have a high degree of protection. They often incorporate Special Protection Areas (SPAs) and Special Areas for Conservation (SACs). In Essex there are 10 Ramsar sites which cover approximately 30,524ha and include coastal areas, estuaries, rivers and lakes/reservoirs. These include Hamford Water, parts of the Colne and Blackwater estuaries, and the Dengie Marshes. Development is not suitable on such sites or in any location that may see a decline in their habitat quality.
- The majority of the Essex coastline has been designated as part of the Mid-Essex Coast Phase, which is made up of 5 separately designated SPAs. Combined these cover an area of approximately 23,000 ha. SPAs are designated to protect rare and vulnerable birds and for regularly occurring migratory species.
- There are two SACs in the county: Epping Forest and the Essex Estuary which considered to be sites of international importance.
- Sites of Special Scientific Interest (SSSIs) are designated areas of land which are considered to be of special interest due to their fauna, flora, geological and/or physiographical features. In Essex there are 81 SSSIs covering a total of 36,322 ha, the largest proportion of which are along the coastline.
- The success of SSSIs is monitored by Public Service Agreement (PSA) targets. A SSSI is deemed to be meeting the PSA target by Natural England if 95% or more of the total area is classed as “Favourable” or “Unfavourable Recovering”. Essex is currently meeting this target, with 98.15% of all SSSIs in the County being in a favourable or unfavourable but recovering condition. 1.04% of the County’s total area of SSSIs is unfavourably declining although none has been lost.
- Natural England is the body empowered to declare National Nature Reserves (NNRs) in England, the Reserves being a selection of the very best parts of England’s Sites of Special Scientific Interest. It is this underlying designation which gives NNRs their strong legal protection. The majority also have European nature conservation designations. There are six NNRs located in Essex. They are the Blackwater Estuary, Colne Estuary, Dengie, Hales Wood, Hamford Water and Hatfield Forest. It is important that new mineral development or activities do not negatively impact upon these designations through inappropriate location or through associated noise, vibration and pollution.
- Local Nature Reserves (LNRs) are designated by local authorities in conjunction with Natural England in recognition of their high interest in the local context for their wildlife or wildlife education value; or because they offer an important area for informal enjoyment of nature by the public. There are currently 39 LNRs in Essex along with the designated NNRs.
- Local Wildlife Sites (LoWS), previously known as Sites of Importance for Nature Conservation (SINC), support both locally and nationally threatened wildlife species and habitats. In Essex there are approximately 1,440 LoWS covering around 13,000ha and together with statutorily protected areas they represent the minimum habitat to maintain current levels of wildlife. New mineral facilities and sites should not be located in areas that would see any decline in these levels of wildlife.

- The amount of woodland has diminished considerably in Essex over time. Three quarters has been lost since the 11th Century. The total wooded area is now 5.7% and this is fragmented and scattered across Essex. Ancient Woodlands in Essex cover approximately 12,800ha or 3.5% of the County and include Epping Forest, clusters in the north-west (e.g. Oxlip woodlands), south-east (e.g. Hockley Woods) and heathland and woodlands on the Danbury ridge.

2.3.7 Water Quality

- Water policy in England aims to protect both public health and the environment by maintaining and improving the quality of water. In addition to the ever increasing demand from human uses, water contributes to the natural environment, having ecological, aesthetic, scientific, educational and recreational value. The quality of water resources can be severely affected by mineral operations and landfill, where the quality of groundwater and water-bodies can become compromised by leachates.
- Essex is bounded by the River Thames to the South of the County. Mineral management and disposal facilities should not cause a decline in water quality where possible. Effects on river water quality should be mitigated and minimised through effective (surface water) drainage mechanisms.
- As well as surface water resources, the north of Essex contains Chalk, Crag and Drift aquifers. The Chalk aquifer is the largest and most important type. It is used primarily for public water supply and spray irrigation. The Crag and Drift aquifers are overlain by sands and gravels of varying thickness which are locally important minor aquifers. These aquifers should not be subjected to leachate migration from landfill.
- The majority of Essex has a very low contamination vulnerability rating. It is only the northern part of the county, including Halstead and Saffron Walden that has a higher vulnerability because of the porosity of the underlying chalk.
- In addition to natural water bodies there are various artificial water bodies in the county, especially reservoirs created through mineral extraction. Hanningfield and Abberton are Essex's largest inland water resources. The Environment Agency (EA) is responsible for managing water resources in England and Wales.
- Water management is challenging in Essex given the combination of high development growth and it being one of the driest counties in England. Annual rainfall in Essex is only 65% of the average in England and Wales. In respect of water quantity in Essex a significant portion of the resource is considered to be 'water stressed'. The resource availability status of rivers and aquifers show that they are generally over abstracted and Essex is not self-sufficient in relation to local sources of water supply and needs to import substantial quantities of water to satisfy existing demand.
- The overall percentages of rivers, canals and surface water transfers in the Anglian River Basin District are expected to improve in ecological, chemical and biological status by 2015. This is also the case with regard to lakes and SSSI ditches, and combined surface waters. There is expected to be no percentage improvement or decline in estuaries, groundwater or coastal waters for ecological, chemical or biological status by 2015.
- The overall percentages of rivers, canals and surface water transfers in the Thames River Basin District are expected to improve in ecological, chemical and biological status by 2015. This is also the case with regard to combined surface waters. There is expected to be percentage improvement in the ecological and biological status of lakes and SSSI ditches, although no change is forecast in chemical status. There is predicted to be improvements in the chemical and biological status of estuaries, however no change ecologically. There is forecast to be no percentage change for ecological, chemical or biological statuses by 2015.
- In total, 12 planning applications made within Essex were objected to by the Environment Agency on water quality grounds between April 2011 and March 2012.

2.3.8 Air Quality

- The transportation of mineral to various sites throughout the County is an important issue with regard to associated air quality through vehicle emissions. In addition to transport related air quality aggregate recycling, dust from surface mineral operations can have a noticeable environmental impact and affect the quality of life of local communities. Amenities can potentially be affected by dust up to 1km from the source, although concerns about dust are most likely to be experienced near to dust sources, generally within 100 m, depending on site characteristics and in the absence of appropriate mitigation.
- Air quality in Essex is generally good. The air quality in Essex is influenced by its close proximity to mainland Europe whilst most industrial processes in Essex are concentrated along the Thames Estuary.
- There are currently 15 AQMAs within the Plan Area. All of the AQMAs have been designated due to increased levels of nitrogen dioxide nitrogen dioxide with some also reporting elevated emissions of PM₁₀. Of the 15 AQMAs in Essex, half are within the Borough of Brentwood and 5 of these are located along the A12.

2.3.9 Noise

- Road traffic creates noise which can affect people's lives. Different modes of transport will create varying amounts of ambient noise and should therefore be monitored. The transportation of extracted and recycled material within the County could contribute to noise pollution in certain localities
- Noise from extraction or recycling sites can also be created from associated machinery and impact on neighbouring developments. It is good practice for noise generating activities to be positioned away from site boundaries. Existing buildings can also be used to shield the noise source. Unfortunately monitoring these sources of noise is problematic and largely qualitative.
- All major roads in Essex experienced some noise levels of over 75dB(A) in the day (defined as 0700 – 1900), in particular the A12, A127, M11 and the M25, and where this was not the case the measurements were mainly between 65 and 70dB(A). In the night (defined as 2300 – 0700) there are lower levels of ambient noise along all the major roads than that seen in the Lden map with only the M25 and the M11 showing levels of more than 70dB(A) along the whole Essex stretch of both roads.

2.3.10 Climatic Factors

- Mineral development has important climate change impacts, particularly with regards to the problem of transporting such a bulky resource.
- Key findings from the UK Climate Change Projections 2009 regarding how the East of England would be effected by 2080 under the current emission scenario are shown below:
 - The central estimate of increase in winter mean temperature is 3°C; it is very unlikely to be less than 1.6°C and is very unlikely to be more than 4.7°C.
 - The central estimate of increase in summer mean temperature is 3.6°C; it is very unlikely to be less than 1.9°C and is very unlikely to be more than 5.9°C.
 - The central estimate of change in winter mean precipitation is 20%; it is very unlikely to be less than 4% and is very unlikely to be more than 44%.
 - The central estimate of change in summer mean precipitation is -20%; it is very unlikely to be less than -44% and is very unlikely to be more than 6%.
- Sea level rise and subsidence will lead to more frequent flooding of coastal areas. Increased temperatures and greater fluctuation in annual precipitation will further increase pressure on water resources. With this in mind it is possible to determine the

potential flood risk that mineral sites can add to water bodies in areas of concern. Essex is already one of the driest areas in the UK.

- Changes in land use and various industrial processes are adding heat-trapping gases, particularly carbon dioxide (CO₂), to the atmosphere. There is now roughly 40% more CO₂ in the atmosphere than there was before the industrial revolution. One of the main causes of increased CO₂ in the atmosphere is through the burning of fossil fuels for: electricity and transportation.
- There was a 12% per capita reduction in CO₂ emissions across Essex between 2005 and 2010. All local authorities in the plan area experienced a reduction in CO₂ emissions per capita. The greatest CO₂ emissions reduction per capita was in Castle Point; achieving an 18.37% reduction between 2005 and 2010. The location of new extraction sites and extraction facilities should not compromise any district or borough's reductions beyond what is reasonably acceptable.
- In Essex the largest proportion of CO₂ emissions produced in 2010 was within the transport sector, accounting for 35.9% of the total CO₂ emissions, followed by the domestic sector which produced 34.5%. Recycling facilities and, where possible, primary extraction sites should be located in strategic locations in order to minimise emissions produced through transportation around the County, which equated to 3,333kt of CO₂ in 2010.
- The transport sector consumes the largest amount of energy within Essex compared to the domestic and industry and commercial sectors. As a whole Essex reportedly consumed 29,890 GWh of energy in 2009.
- Essex has the capacity to generate 180MW of energy using renewable energy resources. This is primarily from landfilled gas and dedicated biomass.

2.3.11 Flooding

- Essex lies within three catchment flood management plan areas – North Essex, South Essex and the Thames. The main sources of flood risk for people, property, infrastructure and land use in these catchment areas are river flooding, surface water flooding, sewer flooding, tidal flooding (South Essex and Thames) and groundwater flooding (South Essex and Thames).
- Surface water flood risk is relatively high in Essex with all main settlements assessed being ranked nationally in the top 1000 settlements most susceptible to surface water flooding. The Preliminary Flood Risk Assessment for Essex (January 2011) suggests that *“there are around 27,000 properties at risk of surface water flooding (from a 1 in 200 year event) in the main settlements of Essex alone”*.
- Significant levels of flood risk have also been identified along the Essex coast and inland along river stretches. Essex Trends 2011 states *“While advances in flood protection have been made since the early 1950s the danger of coastal flooding remains significant, particularly as climate change increases the chance of storms and high tides coinciding.”*
- In Essex between 2011 and 2012 there were 76 planning applications that were objected to by the Environment Agency on the grounds of flood risk. Of these, 5 planning applications came from Essex County Council and related to infrastructure, educational institutions and recycling facilities. These are shown in the following table. There were no permissions approved contrary to Environment Agency advice relating to mineral management facilities.

2.3.12 Population and Social

- Understanding the context of local demographic trends is important in planning for the future of an area, to account for the changing needs of the population, and the needs of people who live and work in Essex. It is important that new mineral management

facilities and sites are located in areas that are sensitive to the requirements of the population, yet not contrary to sustainable mineral transportation.

- Essex had an estimated population of 1,396,599 people as of 2011, having increased by 83,799 people from the 2001 Census figure. At 6.4% this rate of increase is slightly below both the equivalent regional and national figures. In 2011, Basildon had the largest estimated population within Essex at 174,971 people, followed by Colchester and Chelmsford. The smallest population estimate was in Maldon with 61,720.
- According to Essex Trends 2011 Essex has an ageing population and the concentration of over-65s will increase dramatically as the baby-boom children of post-war settlers reach retirement. Although a nation-wide problem, an ageing population will be more evident in Essex as 13% of local people are within ten years of their sixty-fifth birthday; over 26% are within twenty years.
- Migration within the county has been predominantly to the north. *“Those moving within the county, tend to move from the more urbanised south to the more rural north”¹*. Migration across the Essex border has been recorded between Essex and all neighbouring counties and London. The greatest migration flows are to and from London with migration from London being more dominant at 21,000 people compared to over 11,000 people moving in to London from Essex.
- Essex is projected to increase its population by 10.41% to an estimated population of 1,542,010 in 2021. This percentage change is greater than both the national and region levels. It is important to locate new mineral development facilities in close proximity to the areas of greatest need.
- There are varying levels of deprivation across Essex, based on the governments 2010 Indices of Multiple Deprivation (IMD), which is composed of the following seven categories; income, employment, health, education, barriers to housing and services, living standards and crime. There are broadly low levels of deprivation recorded across the county when ranked nationally however pockets of severe deprivation do exist.
- Essex contains 52 areas known as Lower Super Output Areas (LSOAs) in the most deprived 20% nationally and 13 LSOAs in the most deprived 10%. Of the 13, seriously deprived areas 4 are within Basildon Borough, 2 are within Colchester Borough and the remaining 7 are in the District of Tendring. Coastal Jaywick (E01021988) in Tendring District is the most deprived LSOA in the whole of England.

2.3.13 Health

- There are health inequalities within Essex by location, gender, deprivation and ethnicity. The health of people in Essex is generally better than the England average. Deprivation is lower than average, however 46,975 children live in poverty. Male and female life expectancy in all local authorities in Essex is better than, or similar to, the England average. However inequalities show that life expectancy is 6.8 years lower for men and 4.4 years lower for women in the most deprived areas of Essex than in the least deprived areas.
- Over the past ten years, deaths from all causes for men and women and early death rates from cancer improved in parallel with the England average and from heart disease and stroke the Essex rate is still below the national rates.
- Obesity is high with an estimated 24% of adults and are obese and about 16% of year 6 children are classified as obese.
- Priorities in Essex include improving educational attainment, reducing inequalities and improving levels of physical activity.
- Accessible local greenspace is also an important contributor to good health. It not only provides a daily experience of wildlife but contact with nature boosts people's physical and mental health. In Essex there is 15,055ha of accessible natural greenspace

¹ Essex Trends 2011, Strategic Services at Essex County Council (September 2011)

however only 9% of Essex households have full access to it when following criterion of Natural England's Accessible Natural Greenspace Standard (ANGSt). 16% of households within Essex do not have any access to natural greenspace. The areas that fare the worst according to the ANGSt criteria are the more rural parts of the county as there is often limited official public access beyond the footpath network.

- Between January 2007 and April 2011, the number of KSI casualties in the County has reduced, from 1006 to 661. Since May 2008 the number of KSI casualties per month has been lower than the Department for Transport 2010 based target indicator.
- Between January 2007 and April 2011, the number of Child KSI casualties in Essex has reduced, from 158 to 85. Between this period there has been both examples exceedences and a meeting of the Department for Transport target indicator.

2.3.14 Transport

- Essex has good transport connections by road, rail, air and sea. The nationally important M11, M25, A12 and A120 run through the county, and major local roads including the A13, A127, A120 and A414 provide good coverage. Three main rail lines radiate from London, supplemented by a number of branch lines, serving 57 railway stations, and the London Underground extends into the south of the county. As a result of its proximity to London, there is a large commuter population. The county also contains two major 'International Gateways': the UK's third busiest airport at Stansted (which handles around 20 million passengers each year); and Harwich International sea port which provides nationally important connections to Holland and Denmark.²
- However there are persistent network efficiency issues on both the roads and rail with a number of strategic inter-urban routes operating at or near to capacity and the two mainline railway networks being at or above their capacity during the morning and evening peaks.
- Around 6% of traffic on Essex's roads is made up of HGVs, rising to nearly a fifth on the Essex section of the M25, 16% on the M11 and around 14% on sections of the A12 and A120³. There are also around 50 freight trains passing through Essex each day, travelling mainly between Felixstowe and the North-West via London⁴.
- Strategic sites, located in close proximity to the point of use of the minerals are required to comply with sustainable transport policies. In the UK, minerals are moved over longer distances by rail or barge mainly to urban conurbations.
- Travel by car is the preferred travel choice for most trips within Essex; however travel by train represents a higher proportion of trips made than in other comparable areas. This is largely attributed to the fact that a large proportion of commuting trips out of Essex are accommodated by the rail network.
- The average Essex resident commuting distance is 14km (9miles) which is 4km (2.5miles) above the national average and also reflects the importance of London as a source of employment, particularly for those living to the west of the county. Apart from those who travel to London, journey to work data for Essex residents indicates that a high proportion of people live in close proximity to their place of work, with 30% of residents living less than 3 miles from their job⁵.
- Accessibility to key services such as employment, healthcare, education and retail provision for Essex residents is greatest in the centre of urban settlements and decreases considerably in the most rural parts of the county. Vulnerable Essex residents currently have relatively poor access to services and Essex has one of the lowest numbers of households with good access to key services or work within the East of England. Values were indexed with a base of 100 for England and Essex

² Essex Transport Strategy 2011

³ Average Annual Daily Traffic Flow (AADF) data produced by the Department for Transport, 2010

⁴ Strategic Freight Network (2008) Network Rail

⁵ Essex Transport Strategy 2011

scored 87 while neighbouring county of Hertfordshire and the unitary authorities of Thurrock and Southend-On-Sea scored 127, 119 and 142 respectively⁶.

2.3.15 Housing

- The latest population trend data shows that the population in Essex is growing; therefore the provision of adequate housing is a key issue. Not only should there be sufficient housing for the growing population, there should also be suitable housing to meet a wide range of needs.
- Across the period 2011 to 2028, Essex is expecting to experience a net increase of at least 49,161 new dwellings. In the absence of some districts having published their housing trajectories up to 2028, this figure should be considered as a minimum forecast for the total number of completions expected. The need to provide housing trajectories in the preparation of Local Plans, and when reviewing those that have already been adopted, will lead to a fuller picture of future completion in Essex.
- The number of completions in 2011/12 is expected to be lower than the completions recorded in 2010/11; however an increase is forecasted from 2012/13 onwards peaking at 5,157 in 2014/15.
- Between 2001 and 2011 42,452 net additional dwellings had been built within Essex. Completions peaked in 2002/03 at 4,914 and since 2007/08 have continually declined to the lowest rate of completions across the period in 2010/11 at 3,114.
- A mix of housing types and tenures is important to ensure an adequate housing provision for everyone. Castle Point has the highest proportion of private sector stock, accounting for 95% of the total dwelling stock in the borough. Rochford and Tendring also have private stock accounting for over 90% of their total housing stock. Harlow has the smallest proportion of private stock accounting for only 67% of the district's total stock but this is supported by 28% being local authority owned. Rochford and Tendring do not have any local authority owned dwellings in their total dwelling stock but they do provide stock owned by housing associations, as do all the other local authorities in Essex.

2.3.16 Economy

- The economy of Essex is large and generally prosperous, with high standards of living. Although unemployment remains high at 6.4% in 2011 it remains below the national average. Wages are higher than the national averages for both residence based (£563.3) and workplace based (£498.7) earnings⁷. Higher value earnings are found in the west of Essex largely due to greater connections into London. In relation to mineral management, new development from employment growth has implications on the need for minerals which will increase with development. There is also scope for mineral management to supply further employment opportunities across all strategic to non-strategic mineral sites and functions in the MLP plan area.
- Since 2008 the number of new enterprises has decreased yearly from 6,880 in 2008 to 5,875 in 2011. At the same time the number of enterprises which have ceased has increased annually from 5,690 in 2008 to 7,170 in 2011. The total number of enterprises within Essex was reported to be 57,850 in 2011.
- There has also been a 3% decline in the total number of local business units within Essex to 60,330 in 2011 compared to 2008 figures. This is a smaller proportionate decrease than those experienced at the regional and national levels over the same time period.
- Across Essex, employment levels by district peaked between 2007 and 2009 which is in line with regional and national trends. For the whole of Essex employment reached

⁶ 2010 Accessibility Statistics, Department for Transport

⁷ NOMIS data for 2011

595,600 people in 2009 and has subsequently declined to 578,300 in 2010. Recovery to these peak levels for Harlow, Basildon and Brentwood is not expected prior to 2031 and for Braintree it is not expected till 2025. Employment in all other administrative areas will reach their peak levels broadly around 2014.

- 74.3% of the working age population in Essex were recorded as being in employment between June 2011 and June 2012. Seven districts within Essex had a higher proportion of their working age population in employment compared to Essex as a whole and the East of England while Braintree, Harlow, Colchester, Epping Forest and Tendring all have lower employment levels. Epping Forest and Tendring in particular, reported lower proportions of their working age population in employment than the county, regional and UK averages at 69.4% and 68.2% respectively.
- In Essex, employment in the construction sector has fluctuated over the few years with a clear period of growth between 2001 and 2003 where it peaked at 74,900 people, and an equally clear decline in employment between 2009 and 2011 from 72,200 to 57,100 people. The forecasted employment figures to 2029 report a steady recovery to the recorded 2009 figures by 2029.

2.3.17 Data Limitations

Not all the relevant information was available at the local level and as a result there are some gaps within the data set but it is believed that the available information shows a comprehensive view on sustainability within the plan area. In collating the baseline data, ECC noted the following problems:

- there was a lack of existing data for some areas and this could not always be disaggregated from Southend-on-Sea;
- it was difficult to obtain national or regional data that was comparable with Essex specific data; and
- for some areas it was difficult to identify trends.

At the time of writing, the finalised version of the Habitat Regulations Assessment (HRA), Strategic Flood Risk Assessment (SFRA) and Analysis Reports were available to inform the SA/SEA appraisals of non-preferred and preferred sites for the Pre-Submission stage MLP. As such, site appraisals as specified in this report may be subject to change following review ahead of submission.

2.4 Sustainability Objectives

The Sustainability Objectives (SO) were derived from the review of plans and programmes and a strategic analysis of the baseline information. Objectives were based on policy advice and guidance and related to the assessment of the environmental state of the plan area. The appraisal was then able to evaluate, in a clear and consistent manner, the nature and degree of impact and whether significant effects were likely to emerge from the plan's proposed policies. The table below outlines the Sustainability Objectives which together form the Sustainability Framework and were used to inform the appraisal of the MLP.

Table 3: SA/SEA Sustainability Framework of MLP

Sustainability Objectives
1) To protect and enhance biodiversity throughout Essex
2) To maintain and enhance water resources and quality
3) To minimise risk of flooding
4) To encourage the sustainable use of land and protection of soils, including the best and most versatile agricultural land

5) To promote the minerals supply hierarchy and where minerals waste is produced, to promote the movement of minerals waste up the waste management hierarchy
6) To safeguard air quality
7) To minimise the net emissions of greenhouse gases and increase adaptability to climate change
8) To minimise the impact on the historic environment, both above and below ground
9) To protect and enhance the quality and character of the MGB and the Essex landscape
10) To enable all sections of the community to participate fully at all stages of decision making in the MLP and in determining planning applications
11) To maximise opportunities for economic development, including jobs, arising from minerals activities
12) To improve the sustainable use of minerals
13) To achieve beneficial restoration and aftercare of all mineral sites
14) To reduce transportation of minerals and road congestion, and promote more sustainable transport
15) To protect and enhance human health and well being
16) To minimise nuisance and impact on local amenity

2.5 Appraisal of Policies

For clarity, within the Environmental Report, appraisals are set out in the same format as shown in Table 4.

Table 4: Example of Appraisal Format

	Sustainability Objectives																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Short Term																	
Medium Term																	
Long Term																	

In addition to this, the appraisal of each policy or element of the Plan likely to have an environmental, social or economic effect is supported with additional information as described in the following sub-sections:

2.5.1 Description of ‘Significant Effects’

The strength of impacts can vary dependant on the relevance of the policy content to certain sustainability objectives or themes. Where the MLP policies have been appraised against the SA/SEA Sustainability Objectives the following key has been used to illustrate a range of possible impacts:

- ++ Where there will be significant positive impacts
- + Where there will be positive impacts

/	Where there will be uncertain impacts
0	Where there will be no direct impacts
-	Where there will be negative impacts
--	Where there will be significant negative impacts

Commentary is included to describe the significant effects of the policy on the sustainability objectives under the heading 'Significant Effects'.

2.5.2 Description of 'Temporal Effects'

The appraisals of the policies contained within the Pre-Submission MLP recognise that the impacts of the options may vary over time. Three time periods have been used to reflect this and are shown in the appraisal tables as S (short term), M (medium term) and L (long term). For the purpose of the Preferred Approach appraisals S, M and L depict:

- Short term and Medium Term: Within the plan period (Adoption to 2029).
- Long term: Post plan period (Beyond 2029)

2.5.3 Description of 'Secondary, Cumulative and Synergistic Effects'

In addition to those impacts that may arise indirectly from the policy's implementation (secondary effects), relationships between different policies and their content have been assessed in order to highlight any possible strengthening or weakening of impacts from their implementation together. Cumulative effects respond to impacts occurring directly from two different policies together, and synergistic effects are those that offer a strengthening of more than one policy that is greater than any individual impacts.

2.5.4 Description of 'Alternatives Considered and the Reasons for their Rejection / Selection'

The Pre-Submission MLP policies have been the result of a significant plan-making process, including prior consultation versions of the plan. In this process, numerous alternative approaches have been explored and consulted upon. Alternatives for policies are chronicled in each policy appraisal, alongside the reasons for their rejection of progression.

2.5.5 Description of 'Progress through the SA/SEA Process'

The SA/SEA process has been undertaken alongside the progression of the plan from the outset, as part of a truly iterative process. As such, appraisals have helped shape the direction of the policies, and an Environmental Report has been published for consultation alongside each consultation version of the plan. The results of this process have been included for each policy.

2.5.6 Description of 'Impacts on Indicators'

In order to quantify the potential impacts highlighted in the appraisal of policies, a range of indicators have been identified directly relevant to each policy. These will help monitor the successfulness of the policy and to what extent it has helped deliver sustainable development.

2.5.7 Description of 'Proposed Mitigation Measures / Recommendations'

In the SA/SEA of the Pre-Submission MLP negative or uncertain impacts may have been highlighted as a result of policies. As such, mitigation measures may be needed and these are highlighted in this section of each policy. In addition to this, this section also includes

recommendations that are not directly linked to negative or uncertain impacts, but if incorporated may lead to sustainability improvements to the policy.

3 Appraisal of Spatial Vision, Aims and Strategic Objectives

3.1 Introduction

This section sets out the appraisal of the Spatial Vision, Aims and Strategic Objectives as set out in the Pre-Submission MLP.

3.2 The Spatial Vision

(A) Sustainable Development

Minerals development will make a positive contribution to Essex through a plan-led, collaborative approach which promotes the sustainable use, re-use, recycling and extraction of minerals.

Sustainable mineral and mineral-related development will be approved without delay when in accordance with this Plan.

(B) Primary Mineral Provision

Essex will continue to be a major producer and user of sand and gravel, with the majority of that produced being used within the County itself. This will enable the planned growth within district/ borough / city authority plans to occur and facilitate the maintenance of existing infrastructure. A steady and adequate supply of sand and gravel will be provided, having regard to the Local Aggregate Assessment and the targets agreed with the East of England Aggregates Working Party, whilst not over-supplying in order to protect Essex's environment and our finite mineral resources. Plan provision will also be made for silica sand and brick clay.

(C) Co-ordinating Essex's Supply of Minerals

Sources of aggregate, whether primary, secondary or recycled, will be planned to serve the whole of the county and wherever possible located in proximity to the County's main growth centres - Basildon, Chelmsford, Colchester, and Harlow, and the South Essex Thames Gateway,

Haven Gateway and West Essex Alliance (formerly M11 corridor) growth areas, to maintain an appropriate match between mineral supply and demand. The lack of primary aggregate resources in the south and west of the County will be addressed to ensure that planned urban growth can take place without unnecessarily long transport distances. The existing infrastructure of rail depots and marine landing wharves in Essex and neighbouring Thurrock, in particular, will be important in this regard. The long distance importation of aggregates will be maintained to ensure provision of non-indigenous minerals.

(D) Protecting Amenities and Communities

All minerals development will be well-designed to afford protection to local communities and to contribute to the enhancement of the built, natural and historic environment. Mineral developers will engage with communities to create the most appropriate local solutions.

(E) Climate Change

Ensuring all minerals development is located, operated and managed whilst having regard to climate change mitigation and adaptation, so the County plays its part in reducing greenhouse gas emissions and is resilient to potentially more extreme future weather conditions.

(F) Reduce, Re-use and Recycling of Minerals

Minerals previously extracted from the ground will be put to better use. The recycling and reuse of construction, demolition and excavation waste will be maximised, by safeguarding existing

Strategic Aggregate Recycling Sites (SARS) and locating new facilities in proximity to the key centres of Basildon, Chelmsford, Colchester and Harlow. The Council promotes sustainable procurement and construction techniques and the use of alternative building materials in accordance with national and local policies.

(G) Protecting Mineral Resources and Facilities

The needless sterilisation of mineral resources by development will be avoided by designating 'Minerals Safeguarding Areas' (MSA's) for sand and gravel, chalk, brick clay and brickearth. Existing, permitted and preferred mineral sites and mineral supply infrastructure will be safeguarded to ensure the effective operation of these sites is not compromised, and to prevent incompatible development taking place close to existing or planned minerals development to the potential detriment of existing or future occupants.

(H) Restoration and After-use

Mineral workings are temporary in nature. Restoration and after-use schemes will continue to be integral to site selection and the consideration of planning applications, with progressive working and restoration schemes expected. The focus of after-use will shift from purely agricultural uses, important though they remain, towards enhancement of the local environment by means of increased provision for biodiversity, geodiversity, climate change adaptation and outdoor recreation, including Public Rights of Way.

(I) Communities

Collaborative working arrangements will forge stronger links with communities, stakeholders and local planning authorities, as well as neighbouring and more distant planning authorities on whom we rely for non-indigenous minerals. Collectively we will address the sustainable long-term supply of primary aggregates and the protection of public amenity.

(J) Economy and Long Term High Quality Environment and Landscape

As well as bringing economic advantage, effective collaborative working will ensure minerals development makes a positive contribution to our environment and biodiversity, through the protection and creation of high quality habitats and landscapes that contribute to a high quality of life for present and future generations.

3.2.1 Justification

The Vision provides a picture of how mineral and mineral related development will be provided in the County during the period up to 2029. It is the Mineral Planning Authority's view of sustainable mineral development in Essex.

3.2.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	+	0	+	+	++	+	+	+	+	++	++	++	0	++	0	0
Medium Term	+	0	+	+	++	+	+	+	+	++	++	++	0	++	0	0
Long Term	+	0	+	+	++	+	+	+	++	++	+	++	++	++	++	++

3.2.3 Significant Effects

There will be a range of positive impacts on the sustainability objectives as a result of many of the Vision statements. Statement B – Primary Mineral Provision acknowledges the pressures over-supply would have on the environment and there will be long term positive impacts resulting from statement H – Restoration and After-use where the focus for after-use will be towards the enhancement of the local environment by means of increased provision for biodiversity. The long term impacts of the vision will be strengthened through statement J – Economy and Long term High Quality Environment and Landscape.

Statement E – Climate Change touches on issues of flooding where minerals development is to be located, operated and managed in line with making the County more resilient to future more extreme weather conditions. Flooding is specific to locations, and the SA/SEA acknowledges that this is better dealt with within development management criteria (Policy DM1) and in site assessment methodologies rather than as a strategic aim of the plan.

The previous SA/SEA of the Preferred Approach Minerals Local plan raised the possible tension between a shift from purely agricultural after-use to those that seek to enhance the local environment in a variety of ways, including those of amenity and public access. In relation to the Spatial Strategy of the MLP focusing sites to support key areas of growth and development, this approach is supported where a range of benefits can be realised across economic, social and environmental criteria and in line with appropriate local solutions. Thus there will be positive impacts on the sustainable use of land in regards to vision statement H - Restoration and After-use. Similarly positive impacts will be realised in the working period of minerals development through the safeguarding of existing sites and the protection of resources.

There will be strong positive impacts on promoting the minerals supply hierarchy and the movement of minerals waste up the waste management hierarchy through statement A – Sustainable Development, and a plan-led, collaborative approach which promotes the sustainable use, re-use, recycling and extraction of minerals. Additionally, the majority of the vision statements where relevant support the minerals supply hierarchy within the plan period.

In terms of reducing overall transport emissions, an approach where sources of aggregate will be located in proximity to the County's main growth centres (vision statement C – Co-ordinating Essex Supply of Minerals) will have a positive impact on this objective. However, air quality (in terms of impacts resulting from the MLP) is specific to locations in so far as is qualitative, and the SA/SEA acknowledges that this is better dealt with within development management criteria (Policy DM1) and in site assessment methodologies.

Vision statement E – Climate Change will see positive impacts on the minimisation of greenhouse gases and adaptability to climate change where minerals development is located, operated and managed having regard to climate change mitigation and adaptation.

There will be positive impacts on the historic environment resulting from Vision statement D – Protecting Amenities and Communities where all minerals development will be well-designed to afford protection to local communities and to enhancement of the built, natural and historic environment. Concerning minerals workings, the historic environment is specific to locations, and the SA/SEA acknowledges that this is better dealt with within development management criteria (Policy DM1) and in site assessment methodologies.

Vision statement B – Primary Mineral Provision will have positive impacts on the quality of landscapes where there will not be an over-supply in order to protect Essex's environment. In addition to this, the safeguarding of existing, permitted and preferred sites under Vision statement G attempts to minimise the need for new sites to be identified, which can have positive impacts on landscapes on a wider scale. Vision statements H and J will have significantly positive impacts on landscapes in the long term.

Vision statement C – Co-ordinating Essex Supply of Minerals states that sources of aggregates will be located in proximity to the County's main growth centres wherever possible, which may increase the likelihood of any negative impacts, or perceived negative impacts on landscape on a site-by-site basis where operations will be visible by a relatively large proportion of the County's

population. Despite this however, restoration and after-use proposals as identified in Vision statement H, are likely to see significantly positive impacts in the long term to the benefit of these areas.

There will be positive impacts on community participation through vision statement D – Protecting Amenities and Communities, where it is stated that minerals developers will be encouraged to engage with communities to create the most appropriate local solutions. This presumably can create positive impacts in the short to long term, through mitigation and beneficial after-use proposals. In addition there will be positive impacts resulting from Vision statement I – Communities.

There will be positive impact on economic development and job creation where Vision statement B – Primary Mineral Provision sets out the Plan's strategic economic role as a significant sand and gravel producer in the UK, the South East and East of England. In addition to this, Vision statement C sets out the geographic focus of locations for sources of aggregates corresponding to the County's main growth centres, which will provide minerals related job opportunities for these populations.

Vision statements A – Sustainable development, B – Primary Mineral Provision, F – Reduce, Re-use and Recycling of Materials and G – Protecting Mineral Resources and Facilities will all positively contribute to improving the sustainable use of minerals. Of these, statement F actively seeks to do this in line with national, regional and local policies and to the benefit of a number of other sustainability objectives.

There will be strong long term positive impacts on beneficial restoration as a result of Vision statement H – Restoration and After-use through a shift from purely agricultural use to those including biodiversity, outdoor recreation and public rights of way.

There will be positive impacts on the reduction of transportation of minerals and road congestion and sustainable transport through Vision statement C – Co-ordinating Essex Supply of Minerals. This statement not only seeks to locate workings in proximity to the County's main growth areas, matching supply with demand to reduce transport distances, but also looks to prioritise the existing rail depot infrastructure and marine landing wharves for the importation of non-indigenous minerals.

3.2.4 Temporal Effects

Restoration and after-use proposals as identified in Vision statement H, are likely to see significantly positive impacts on biodiversity and landscapes comparatively as well as restoration and after-use in the long term.

There will be long term positive impacts on human health and well-being through the flexibility of statement H – restoration and After-use in terms of restoration to amenity and public rights of way. This is supported by the approach of involving communities to deliver restoration and after-uses that benefit localities as specified in statements D and I. Statement D also seeks protection of communities' well-being in the short-medium term by mitigating any negative impacts that may arise on a site by site basis.

There will be long term positive impacts on minimising nuisance and impacts on amenity through the flexibility of statement H – restoration and After-use in terms of restoration to amenity. This is supported by the approach of involving communities to deliver restoration and after-uses that benefit localities as specified in statements D and I. Statement D also seeks protection of communities' well-being in the short-medium term by mitigating any negative impacts that may arise on a site by site basis.

3.2.5 Secondary, Cumulative and Synergistic Effects

There will be positive cumulative impacts on the Vision with policies S12 and S10.

There will be indirect positive impacts on biodiversity and water resources and quality in so far as this is covered by statement D – Protecting Amenities and Communities under protection to and enhancement of the natural environment. There may also be potential positive impacts resulting

from some specific restoration and after-use proposals under statement H – Restoration and After-use and statement J – Economy and Long term High Quality Environment and Landscape.

Vision statements B and C will cumulatively have a strong positive impact on economic growth, through a focus on the economic role minerals development has in the County, its important role supporting growth in the County, and indirectly demonstrating possibilities to provide jobs through its location in such areas. Impacts are however limited in the long term, based on individual restoration schemes and after-use and their economic potential.

A non-restrictive policy direction for after-use will see wide benefits in the long term, especially in accumulation with Vision statement C, focusing operations around the County's main growth centres. This allows those areas of the largest populations to benefit from amenity from after-use in accordance with local needs as specified in Vision statements D and I.

Indirectly there may also be positive impacts on human health, well being and amenity resulting from statement J in terms of the protection and creation of high quality habitats and landscapes that contribute to a high quality of life for present and future generations where after-use schemes are publically accessible.

3.2.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At the Further Issues and Options stage, The Vision looked at the direction of the plan under the following ten headings; Sustainable Construction, Efficient Mineral Use and Re-use, High Levels of Construction and Demolition Waste Re-use and Recycling, Mineral Re-use and Recycling Integral to all Major Construction Project Specifications, Minimal Sterilisation of Mineral Resources, Safeguarding of Mineral Reserves and Preferred Sites, Safeguarding of Mineral Facilities, Primary Mineral Provision, Restoration and After-use, and Climate Change Mitigation and Adaptation. This was deemed reasonable in light of the direction of national policy and guidance at the time, and the MLP's compliance with it.

Preferred Options Stage

At this stage the Preferred Approach was to reiterate the Vision from the Further Issues and Options stage, with no amendments. It is stated that the Vision is affected by the options/alternatives of other policies progressed throughout the plan making process.

Pre-Submission Draft Stage

In reflection of the above, the Pre-Submission Draft Vision changed to reflect the direction of the plan as it progressed, to become more aligned with Essex and the function of the MLP, and to reflect the NPPF. As such, the issues covered in the Vision are; Sustainable Development, Primary Mineral Provision, Co-ordinating Essex Supply of Minerals, Protecting Amenities and Communities, Climate Change, Reduce, Re-use and Recycling of Minerals, Protecting Minerals resources and Facilities, Restoration and After-use, Communities, and Economy and Long Term High Quality Environment and Landscape.

3.2.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted an overall positive impact with each statement supporting one or more of the Sustainability Objectives. There were however a number of uncertainties relating largely to the location of additional recycled aggregate facilities, minerals reserves and preferred sites and their potential impacts on the countryside, human health, nuisance and air quality. A negative impact was assessed due to the possibility that development of primary extraction may have a detrimental effect on air quality and that worked safeguarded minerals sites may disturb local communities.

The SA/SEA of the Preferred Approach MLP highlighted that the majority of Vision Statements within the MLP accord with the Sustainability Framework. One area however, within which there was assessed an inherent tension between the Vision and the Sustainability Framework, regarded

agricultural land and soils where a shift from purely agricultural based restoration proposals could reduce the amount of agricultural soil. This was however considered to be acceptable as whilst there could be a reduction in the protection of soils, there will be wider benefits that will be accrued by following this change in emphasis.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, the progression to a Pre-Submission working draft was assessed as having positive impacts across a range of sustainability criteria. One area of clarification was raised in regards to (H) Restoration and After-use; where 'climate change adaptation' is referenced, it would be useful to offer a definition of what this means, especially as a term alongside other criteria of biodiversity, geodiversity, outdoor recreation and public rights of way. This was clarified as a reference to those measures included in the specific climate change policy (S3) in the MLP, and as such this was progressed for the final Pre-Submission Draft MLP.

3.2.8 Impacts on Indicators

The implementation of The Vision is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Tonnage imported
- Number of vehicle movements generated by site operation.
- Tonnage transported by means other than road.
- Amount of recycled material utilised
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.

3.2.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for the Vision.

3.3 Aims and Strategic Objectives

The MLP Strategic Objectives have been compared against the SA/SEA Sustainability Objectives for compatibility. In doing this, the following key has been used to illustrate their compatibility:

✓	Where the Sustainability and Strategic Objectives are compatible
/	Where it is uncertain whether the Sustainability and Strategic Objectives are compatible
0	Where the Sustainability and Strategic Objectives are not related
X	Where the objectives are potentially incompatible

Aims	Strategic Objectives
1. To promote sustainable development.	<p>1. To ensure sustainable minerals development can be approved without delay in accordance with the presumption in the National Planning Policy Framework.</p> <p>2. To ensure minerals development supports the proposals for sustainable economic growth, regeneration, and development outlined in adopted Local Plans/ LDFs prepared by Essex district/ borough/city councils.</p> <p>3. To ensure that minerals development in the County fully promotes sustainable development.</p> <p>4. To ensure certainty for both developers and the public. (economic, social, and environmental)</p>
2. To promote a reduction in greenhouse gas emissions including carbon, and to ensure that new development is adaptable to changes in climatic conditions.	<p>5. To ensure that minerals and associated development provides for</p> <ul style="list-style-type: none"> - The minimisation of greenhouse gas emissions during the winning, working and handling of minerals. - Sustainable patterns of minerals transportation - The integration of features which promote climate change mitigation and adaptation into the design of minerals restoration and after-care proposals. <p>(environmental)</p>
3. To promote social inclusion, human health and well-being.	<p>6. To ensure that local communities are consulted and their views considered during the development of minerals proposals and in the determination of planning applications for minerals development.</p> <p>7. To ensure that the impacts on amenity of those people living in proximity to minerals development are rigorously controlled, minimised and mitigated. (social)</p>
4. To promote the efficient use of minerals by	8. To reduce reliance on primary mineral

<p>using them in a sustainable manner and reducing the need for primary mineral extraction.</p>	<p>resources in Essex, firstly through reducing the demand for minerals and minimising waste, and secondly, by the re-use and use of recycled aggregates. (economic, social, and environmental)</p>
<p>5. To protect and safeguard existing mineral reserves, existing permitted mineral sites and Preferred Sites for mineral extraction, as well as existing and proposed sites for associated mineral development.</p>	<p>9. To identify and safeguard the following mineral resources in Essex: - Sand and gravel, silica sand, brickearth, brick clay, and chalk reserves which have potential future economic and/ or conservation value. Unnecessary sterilisation should be avoided. - Existing and potential secondary processing and aggregate recycling facilities that are of strategic importance for future mineral supply to ensure that these are not compromised by other non-mineral development. (economic, social, and environmental)</p>
<p>6. To provide for a steady and adequate supply of primary minerals to meet future requirements.</p>	<p>10. To provide for a steady and adequate supply of primary aggregates and industrial minerals by, - safeguarding transshipment sites for importing and exporting mineral products; - meeting the mineral provision targets agreed by the East of England Aggregates Working Party, or as indicated by the Local Aggregate Assessment. - identifying suitable mineral extraction sites through site allocations in the Plan; (economic)</p>
<p>7. To promote and enhance the natural, historic and built environment in relation to mineral extraction and associated development.</p>	<p>11. To provide protection from minerals development to designated areas of landscape, biodiversity, geodiversity, cultural and heritage importance, in a manner which is commensurate with their importance. 12. To secure high quality restoration of extraction sites with appropriate after-care to achieve new after-uses which are beneficial and enhance the local environment. 13. To maintain and/or enhance landscape, biodiversity and residential amenity for people living in proximity to minerals development. (environmental, social)</p>

<p>8. To reduce the impact of minerals extraction and associated development on the transport system.</p>	<p>14. To achieve more sustainable patterns of minerals transportation by,</p> <ul style="list-style-type: none"> - Giving preference to identifying local sources of aggregate as close as reasonably possible to urban growth areas and growth centres. - Optimising how minerals sites obtain access to the strategic highway network. - Mitigating the adverse traffic impacts of mineral extraction and associated development by appropriate traffic management measures. - Increasing the use and availability of rail and water facilities for the long haul movement of mineral products. <p>(economic, social, and environmental)</p>
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3.3.1 Justification

The Vision will be expressed and delivered through the aims and objectives. Individual objectives are cross-referenced to the three dimensions of sustainable development defined in paragraph 7 of the National Planning Policy Framework – namely economic, social, and environmental.

3.3.2 Impact on SA/SEA Objectives

Aims of MLP	1				2	3		4	5	6	7			8
Strategic Objectives of MLP	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SA/SEA Objective														
SA/SEA Objective 1	0	0	0	0	0	0	0	0	0	/	✓	✓	✓	0
SA/SEA Objective 2	0	0	0	0	0	0	✓	0	0	0	0	0	0	0
SA/SEA Objective 3	0	0	0	0	0	0	✓	0	0	0	0	0	0	0
SA/SEA Objective 4	0	0	✓	0	0	0	✓	0	✓	0	0	0	0	0
SA/SEA Objective 5	0	0	✓	0	0	0	0	✓	0	✓	0	0	0	0
SA/SEA Objective 6	0	0	0	0	0	0	✓	0	0	0	0	0	0	✓
SA/SEA Objective 7	0	0	0	0	✓	0	0	0	0	0	0	0	0	0
SA/SEA Objective 8	0	0	0	0	0	0	0	0	0	/	✓	0	✓	0
SA/SEA Objective 9	0	0	✓	0	/	0	0	✓	0	/	0	✓	✓	0
SA/SEA Objective 10	/	0	0	✓	0	✓	0	0	0	0	0	0	0	0

SA/SEA Objective 11	0	0	✓	0	0	0	0	0	0	0	0	0	0	✓
SA/SEA Objective 12	✓	✓	✓	✓	0	0	0	✓	✓	✓	0	0	0	✓
SA/SEA Objective 13	0	0	0	0	✓	0	0	0	0	0	0	✓	0	0
SA/SEA Objective 14	0	✓	0	0	✓	0	✓	0	0	0	0	0	0	✓
SA/SEA Objective 15	0	0	0	0	0	0	✓	0	0	/	0	0	✓	/
SA/SEA Objective 16	/	0	0	0	0	✓	✓	0	0	/	0	0	✓	/

3.3.3 Significant Effects

The aims and strategic objectives of the MLP have positive impacts on all of the Sustainability Objectives. Where uncertain impacts are likely to occur, the majority of these will be rectified in other elements of the Local Plan where site specific characteristics and impacts are more relevant, such as site allocation criteria and assessments and development management policies. Similarly, certain objectives and criteria of the Sustainability Framework are more relevant to these elements.

3.3.4 Temporal Effects

There are no identified temporal impacts resulting from the plan's aims and objectives, where much of the content is elaborated on in separate policies.

3.3.5 Secondary, Cumulative and Synergistic Effects

There will be no identified secondary, cumulative or synergistic impacts resulting from the plan's aims and objectives, where much of the content is elaborated on in separate policies.

3.3.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

There were 11 Objectives covering issues of the minerals supply hierarchy, safeguarding minerals resources, secondary processing and recycling facilities, the efficient use of minerals, appropriate primary mineral supply, sustainable short haul and long haul transportation, the protection of designated sites and the enhancement of local landscape character and biodiversity, mineral extraction site restoration and local communities. This approach was deemed reasonable in light of focusing on the key themes of a minerals plan as specified in line with national policy and guidance at the time and the MLP's compliance with it.

Comments received in response to the Further Issues and Options paper objectives were generally supportive of the objectives but concerns were raised about deliverability, protection of the environment and a biodiversity focus on site selection, consistency with national policy and clarification about wording of some objectives.

Preferred Options Stage

A number of consultation responses sought the rationalisation of various objectives. It was considered appropriate therefore to combine several of them, and a move towards 7 instead of 11 objectives at the Preferred Approach MLP stage. This sets out more clearly and reasonably what the MLP exists to achieve in the first instance.

Pre-Submission Draft Stage

The above alternatives and alternative approaches for the objectives of the MLP were rejected in favour of tying specific objectives into wider strategic aims, and how they responded to economic, social and environmental themes. This ensures that previous iterations were given a more local specific context that ties in with deliverability, and the three overarching themes of sustainability in line with the NPPF and a presumption in favour of sustainable development. The aims and objectives of the plan have sought to tie in requirements from a national level into a local context at all stages of the plan's progression, and thus this is considered the most reasonable approach to take.

3.3.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted uncertain impacts related to the location of mineral extraction sites, safeguarded sites and facilities. The restoration of sites has also created uncertainty as the impact would largely depend on the extent of the restoration and the final use of site. In addition to this, negative impacts were highlighted surrounding the safeguarding of facilities from new development, which could have an economic impact, and that worked safeguarded minerals sites may disturb local communities or amenities.

The SA/SEA of the Preferred Approach MLP highlighted uncertain issues surrounding the potential conflicts between economic growth and environmental and amenity criteria, although understanding that this was a common and unavoidable theme to some extent. A lack of adherence to the criterion of public participation in plan preparation was also highlighted, although again it was acknowledged that the Plan's Objectives did incorporate a sufficient degree of consultation over preferred site location and windfall sites.

The progression to a Pre-Submission working draft saw the Plan's Objectives evolve to tie specific objectives into strategic aims, and how they responded to economic, social and environmental themes. Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, no negative impacts were highlighted, although some clarification was needed regarding the deliverability and mechanisms of controlling 'pollution' as to have no impacts on social receptors. This was amended for the final Pre-Submission Draft MLP to remove this element.

3.3.8 Impacts on Indicators

The implementation of The Aims and Strategic Objectives is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Tonnage imported.
- Number of vehicle movements generated by operation.
- Tonnage transported by means other than road.
- Number of representations made to consultation of policy documents and individual planning applications.
- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.

- Location of Strategic Lorry Routes.

3.3.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for the Aims and Objectives.

4 Appraisal of the Strategic Policies, ‘The Strategy’ and Strategic Priorities

4.1 Introduction

This section sets out the outcome of the Appraisal of the strategy element of the Local Plan.

This contains Strategic Policies, The Strategy and Strategic Priorities, which have been appraised as part of the SA/SEA and reported within this Environmental Report.

4.2 Policy S1 Presumption in Favour of Sustainable Development

The Minerals Planning Authority will take a positive approach to minerals development that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will work proactively with applicants to find solutions which mean that proposals can be approved wherever possible, and to secure minerals development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with the site allocations and policies in this Local Plan will be approved without delay, unless material considerations indicate otherwise.

Where there are no policies relevant to the application or relevant policies are demonstrably out-of-date at the time of making the decision, the Minerals Planning Authority will grant permission unless material conditions indicate otherwise – taking into account whether:

- Any adverse impacts of granting planning permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or
- Specific policies in the National Planning Policy Framework indicate that development should be restricted.

4.2.1 Justification

At the heart of the National Planning Policy Framework (NPPF) is a ‘presumption in favour of sustainable development’ which should be seen as a golden thread running through both plan-making and decision-taking. The wording of the presumption is set out in paragraph 14 of the NPPF. The policies and allocations included in the MLP will deliver what is considered to be sustainable development in Essex. Policy S1 has been included to clarify the operational relationship between national policy in the NPPF and this Local Plan. The NPPF is a material consideration in the determination of planning applications.

4.2.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4.2.3 Significant Effects

There will be no direct impacts on any of the sustainability objectives; however there will be positive impacts in accumulation with other policies aligned more closely to specific mineral based, economic, social and environmental criteria in the MLP.

4.2.4 Temporal Effects

No temporal effects have been identified for this policy.

4.2.5 Secondary, Cumulative and Synergistic Effects

There will be no direct impacts on any of the sustainability objectives; however there will be positive impacts in accumulation with other policies aligned more closely to specific mineral based, economic, social and environmental criteria in the MLP.

4.2.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage & Preferred Options Stage

There were no previous iterations of this policy as it has been incorporated into the Pre-Submission Draft as a result of the new National Planning Policy Framework.

Pre-Submission Draft Stage

Although no alternatives have been formally consulted upon, two options have been considered through the plan's development; that is to include the model wording policy, or to not. It has been agreed that the policy should be included in so far as it supports a non-restrictive stance on policy, promotes development in line with the NPPF and underpins the approach to many other policies. The alternative to not include this policy can be considered reasonable in that the essence of it is evident in other policies, however has not been explored further in favour of reinforcing the importance of non-restrictive policy in the plan.

4.2.7 Progress through the SA/SEA Process

There were no previous iterations of this policy as it has been incorporated into the Pre-Submission Draft MLP as a result of the new National Planning Policy Framework. The SA/SEA supports its inclusion where it translates the presumption in favour of sustainable development into the context of a Minerals Planning Authority and it is useful to note how the approach of fulfilling this feeds into the more county specific spatial vision and strategic objectives.

4.2.8 Impacts on Indicators

The implementation of Policy S1 is unlikely to directly impact on any of the SA/SEA indicators.

4.2.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage.

4.3 The Strategy and Policy S2 Strategic Priorities for Minerals Development

The Strategy

The Strategy of the Plan is:

To provide for the best possible geographic dispersal of sand and gravel across the County, accepting that due to geographic factors the majority of sites will be located in the central and the north eastern parts of the County (to support key areas of growth and development and to minimise mineral miles) with a focus on extending existing extraction sites with primary processing plant, and reducing reliance on restoration by landfill.

Policy S2 Strategic Priorities for Minerals Development

The strategic priorities for minerals development are focused primarily on meeting the mineral supply needs of Essex whilst achieving sustainable development. The strategy will promote this by:-

1. Ensuring minerals development makes a contribution towards reducing greenhouse gas emissions, is resilient and can demonstrate adaptation to the impacts of climatic change,
2. Ensuring there are no significant adverse impacts arising from proposed minerals development for public health and safety, amenity, quality of life of nearby communities, and the environment,
3. Reducing the quantity of minerals used and waste generated, through appropriate design and procurement, good practices, and encouraging re-use and encouraging the re-use and recycling of construction materials containing minerals,
4. Improving access to, and the quality and quantity of recycled/ secondary aggregates, by developing and safeguarding a well distributed County-wide network of strategic and non-strategic aggregate recycling sites,
5. Safeguarding mineral resources of national and local importance, minerals transshipment sites, Strategic Aggregate Recycling Facilities facilities and coated roadstone plants, so that non-minerals development does not sterilise or compromise mineral resources and mineral supply facilities,
6. Making planned provision through Preferred Site allocations for a steady and adequate supply of aggregates and industrial minerals to meet identified national and local mineral needs in Essex during the plan-period whilst maintaining landbanks at appropriate levels,
7. Providing for the best possible geographic dispersal of sand and gravel across the County to support key areas of growth and development, infrastructure projects and to minimise mineral miles,
8. Ensuring progressive phased working and the high quality restoration of mineral extraction developments so as to:
 - a) significantly reduce reliance upon the use of landfill materials and,
 - b) provide beneficial after-use(s) that secure long lasting community and environmental benefits, including biodiversity, and,
 - c) protect the soils resource for best and most versatile agricultural land.
9. Maintaining and safeguarding transshipment sites within the County to provide appropriate facilities for the importation and exportation of minerals.

4.3.1 Justification

The strategic priorities in this Plan are designed to deliver the collective vision and agreed objectives for the County of Essex. The strategic priorities have been prepared to support and encourage sustainable development, and it provides the essential framework to ensure the right amount of mineral development takes place in appropriate locations and at the right time, consistent with the constraints and opportunities provided by our unique environment. To this end, the Plan identifies key locations for future development, where appropriate. The strategy provides an investment, delivery, and decision-making framework for the minerals industry, our partner local authorities, public bodies, and other interested stakeholders.

4.3.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	++	++	+	++	0	0	0	+	++	0	++	+	++
Medium Term	0	0	0	++	++	+	++	0	0	0	+	++	0	++	+	++
Long Term	++	0	0	++	++	+	++	0	0	0	/	++	++	++	++	++

4.3.3 Significant Effects

There will be no additional impacts on biodiversity, water quality, the historic environment and landscapes from minerals development as a result of priority 2, which seeks to mitigate any adverse impacts that may occur. It is acknowledged that many environmental criteria are local level issues, and although relevant to the strategic level are as such more appropriately covered in development management criteria and site selection methodologies rather than a strategic priority.

There will be positive impacts on the sustainable use of land, where the encouragement of the re-use and recycling of construction materials, the non-sterilisation of resources and the identification of preferred site allocations for a steady and adequate supply of minerals all seek to minimise the need for marginal or inappropriate sites to be identified. The protection of soils and the best and most versatile agricultural land in priority 8 also adheres to this objective.

Policy S2 and the overall strategy both combine to promote the minerals supply hierarchy and provide sufficient detail on reducing reliance on restoration by landfill required on a strategic level. There will therefore be positive impacts on this throughout the short-long term.

There would be a positive effect on air quality through adopting a strategic approach to site location. By allocating the majority of sites to support key areas of growth and development to reduce mineral miles, this is likely to reduce air quality impacts on a broad level. Finally, the policy direction is for a reduction of primary extraction in favour of material recycling and re-use. This will reduce those emissions associated with primary extraction.

There will be a positive impact regarding minimising greenhouse gases and increasing the adaptability to climatic change where minerals development will make a contribution towards reducing greenhouse gas emissions and can demonstrate adaptation to the impacts of climate change. By allocating the majority of sites to support key areas of growth and development to reduce mineral miles, this is likely to reduce air quality impacts on a broad level. Emissions associated with extraction are also typically higher than with re-use and recycling, which is a strategic priority of the plan, so the general direction will also contribute to a reduction in emissions.

Whilst it is considered that there would be no effect with respect to job creation, general economic development will be aided by the strategic priorities. The policy seeks to create a network of strategic and non-strategic recycling facilities to cover the spatial extent of Essex. The strategy in

relation to distribution of the majority of sites also responds well to the large areas of the County's population, creating accessible job creation from minerals development/activities.

The strategic priorities directly accord with improving the sustainable use of minerals. They seek to promote the use of recycled aggregates and encourage the re-use and recycling of construction materials, thereby increasing the amount than can be substituted for primary aggregate.

The strategic priorities directly accord with reducing the transportation of minerals. This approach calls for the strategic location of sites to ensure that transportation distances are minimised where the majority of sites will be located to support key areas of growth and development.

Although it is unlikely that the operation of minerals development will enhance well being, there will be a positive impact where the strategy ensures there are no significant adverse impacts arising from proposed minerals development for public health and safety, amenity and quality of life of nearby communities. Although such impacts are often very localised and relevant to development management criteria and site methodologies, the significance of the potential issue is recognised as a strategic one considering all or a number of sites in accumulation. Restoration proposals to benefit communities, amenity and the environment also have long term positive impacts.

There will be positive impacts on minimising nuisances and impacts on amenity where there will be no significant adverse impacts arising from proposed minerals development for public health and safety, amenity and quality of life of nearby communities. Although such impacts are often very localised and relevant to development management criteria and site methodologies, the significance of the potential issue is recognised as a strategic one considering all or a number of sites in accumulation.

4.3.4 Temporal Effects

There will be significant positive impacts on biodiversity through priority 8 in the long term through high quality restoration to provide beneficial after-use and environmental benefits, although it is recognised that restoration to habitats for the purpose of biodiversity may not be the most beneficial after-use in all locations.

The impacts on maximising opportunities for economic development, including jobs, arising from minerals activities in the long term are uncertain; depending greatly on specific proposals for after-use.

Strategic Priority 8 seeks to significantly reduce future reliance upon the use of landfill materials, provide beneficial after-use for a wide range of benefits and protect soils where appropriate. This flexible approach allows for a local context to be applied whilst acknowledging the strategic significance of restoration and thus has positive impacts on beneficial restoration in the long term.

4.3.5 Secondary, Cumulative and Synergistic Effects

There will be no secondary, cumulative or synergistic impacts resulting from Policy S2, where much of the content is elaborated on in separate policies.

4.3.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage four options were explored surrounding the spatial strategy and the broad direction of minerals development over the plan period. These were Option 1 - Predominantly Extensions to Existing Extraction Sites, Option 2 - Dispersed Spread of Sites Across the County, Option 3 - Concentrated Supply of Sites with Some Dispersed Sites, and Option 4 - A Hybrid of the Above Three Options.

Option 3 was deemed a reasonable alternative as it would predominantly focus minerals development in line with existing infrastructure, with some additional dispersal in areas of identified need. It was not progressed however due to it being contrary to the principle of promoting market competition, transport costs and emissions being greater to the M11 and Haven gateway from a central concentration, and the implication of increasing road distances from source to use (i.e.,

from the central part of County to the periphery) would be to increase aggregate imports through existing transshipment facilities with associated costs of double-handling and carbon use.

Option 2 was also deemed reasonable as it would closely align with a requirement to minimise mineral miles. It was not progressed due to dispersal (in isolation) being difficult to deliver with numerous new sites needed, it ignores the investment and efficiencies that operations from existing sites have, and was not favoured by respondents as a result of consultation.

Option 1 in isolation was considered a reasonable alternative as it would result in the least amount of disruption to the environment and communities from new minerals development of all alternatives. It was not progressed however; as it would fail to adequately address the sustainability issues around mineral miles. Based on likely future patterns of supply, the miles to transport aggregate to areas of demand in the County would increase over the plan period with resulting increases in transport costs, carbon emissions and congestion of the highway network. There may also be cumulative adverse effects of having so many existing sites operating in close proximity.

Preferred Options Stage

A mixture of Options 1 and 2 became the preferred approach for spatial distribution (Option 4). This was deemed reasonable where the extension of existing sites element utilises existing infrastructure and mineral supply patterns across the County. It is also more likely to provide certainty of delivery, minimise environmental disturbance and avoid loss / sterilisation. The element that provides for a dispersed pattern of sites across the County minimises the demands placed on the transport network, cost of transport, carbon emissions and optimises the functional route hierarchy. It was deemed therefore important and reasonable to provide for new sites in the west of the County to re-dress the spatial imbalance and limit the need for HGVs to travel from the centre or east. Additional weighting in the site selection process was also provided for a portion of the tonnage needed in the west to make the 'dispersal' component of the spatial strategy viable.

Pre-Submission Draft Stage

The spatial direction of growth at the Pre-Submission stage looks at providing for the best possible geographic dispersal of sand and gravel across the County, accepting that due to geographic factors the majority of sites will be located in the central and north-eastern parts of the County (to support key areas of growth and development and reduce mineral miles) with a focus on extending existing extraction sites with primary processing plant, and reducing reliance on restoration by landfill. This is considered a reasonable approach as it fairly allocates sites on their merits, and seeks to provide an element of the required distribution. The additional weighting of western sites in the site selection process, to support notions of dispersal, was removed due to consultation responses at the Preferred Approach stage. These predominantly stated that the method used to achieve this had not been fair, particularly with regards to the western weighting of sites. The western weighting was intended to address the need for sites in the western side of the County where relatively few sites had come forward. However the way that this was implemented resulted in additional points being added after the other scoring had taken place, where no clear evidence was provided to justify this number. As a result of this, the Pre-Submission MLP has adopted an approach based on the dispersal of mineral sites on the main road network, rather than on the allocation of sites to the west, centre or north east. In addition, strategic priorities are included to highlight those issues to be addressed on a strategic level in line with The Strategy, in order to focus on strategic distribution and minimise impacts.

4.3.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted that a call for sites could increase the yield of primary minerals dependant on the suitability of sites which may come forward. Numerous potential negative impacts were highlighted surrounding options for dispersal and concentration; however most were dependant on the specific locations of individual sites.

The SA/SEA of the Preferred Approach MLP recommended the preferred approach, allowing for both site extensions and site creation be adopted. Whilst a lack of spatial context means that it is

impossible at this stage to fully quantify impacts across the whole Sustainability Framework, there are numerous positives that are likely to arise and considerably less uncertainty than there would be under the alternatives. It was recommended however that sites should only be extended where it can be shown that the value of minerals to be extracted outweighs any potential negative effects on the natural and built environments, human health and local amenity.

The progression to a Pre-Submission working draft stage saw the Plan's Strategy evolve to an approach based on the dispersal of mineral sites on the main road network, rather than on the allocation of sites to the west, centre or north east, as a result of consultation responses to previous 'western weighting' site selection criteria that affected the dispersal element of the Preferred Approach Strategy. In addition to this, the Strategy at Pre-Submission working draft stage has a number of supporting Strategic Priorities that are important to deliver at a strategic level. Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, no negative impacts were highlighted other than a few additional explanations of terminology in this instant. These recommendations have been included in the final Pre-Submission Draft MLP.

4.3.8 Impacts on Indicators

The implementation of The Strategy and Policy S2 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Tonnage imported
- Location of rail links.
- Number of vehicle movements generated by site operation.
- Congestion ratios of relevant routes.
- Tonnage transported by means other than road.
- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Number of vehicle movements generated by site operation.
- Tonnage transported by means other than road.
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.

4.3.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for The Strategy and this policy.

4.4 Policy S3 Climate Change

Applications for minerals development shall demonstrate how they have incorporated effective measures to minimise greenhouse gas emissions and to ensure effective adaptation and resilience to future climatic changes, having regard to:

1. Siting, location, design and transport arrangements,
2. On-site renewable and low carbon energy generation, where feasible and viable,
3. National and local principles/ design standards for Sustainable Drainage Systems, including measures to enhance on-site water efficiency and minimise flood impacts both on-site and in relation to adjacent land and 'downstream' land-uses,
4. On-site resilience to unexpected climatic events,
5. The implications of coastal change, where relevant, and,
6. The potential benefits from site restoration and after-use schemes for biodiversity and habitat creation, flood alleviation, and provision of living carbon sinks.

4.4.1 Justification

Proposals for minerals development should consider the need to reduce GHG emissions and build-in resilience and adaptability to climate change effects. Possible measures will vary depending on the particular circumstances of each mineral development proposal.

Nevertheless, there are a number of key ways that minerals development can respond to climate change issues.

4.4.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	+	++	0	0	+	++	0	0	0	0	0	+	+	0	0
Medium Term	0	+	++	0	0	+	++	0	0	0	0	0	+	+	0	0
Long Term	+	+	++	0	0	+	++	0	0	0	0	0	+	+	0	0

4.4.3 Significant Effects

There will be no direct impacts on the water quality element of this objective; however water resources and efficiency criteria are met where applications should include measures to enhance on-site water efficiency. In conjunction with after-use proposals specified in point 6, these measures are required post minerals working and in the long term.

This policy directly adheres to minimising flood risk through requiring applications to include details on climate change adaptation, sustainable drainage systems, measures to minimise flood impact on and off (as a result of) the site, resilience to unexpected climatic events, the implications of coastal change and flood alleviation.

There will be positive impact on air quality where applications will have to demonstrate how they have incorporated effective measures to minimise greenhouse emissions, and also in regard siting, location, design and transport arrangements. This is also the case for minimising greenhouse

gases and adapting to climate change through further resilience conditions, adaptation to climatic change and the possible incorporation of on-site renewable and low carbon energy generation.

There will be no additional impact on landscapes where potential tensions between potential on-site renewable generation methods will not occur where renewables will only be sought where feasible and viable.

There will be positive impacts on achieving beneficial restoration where climate change adaptation schemes and their viability and incorporation will have regard to the potential benefits from site restoration and after-use schemes.

There will be positive impacts on reducing transportation and congestion where applications will have to demonstrate how they have incorporated effective measures to minimise greenhouse emissions in regard to siting, location and transport arrangements.

4.4.4 Temporal Effects

There will be positive impacts on biodiversity in the long term where applications will have to demonstrate how they have incorporated effective measures to minimise greenhouse gas emissions and to ensure effective adaptation and resilience to future climatic changes having regard to the potential benefits from site restoration and after-use schemes for biodiversity and habitat creation.

4.4.5 Secondary, Cumulative and Synergistic Effects

There will be indirect positive impacts on the protection of soils and high grade agricultural land by minimising the flood impacts in relation to downstream land-uses and adjacent land, in so far as this is relevant to high quality agricultural land in specific circumstances.

There will be indirect positive impacts on health and well-being through the minimisation of transport emissions and flood risk, which will have secondary impacts in cases of unexpected climatic events or where housing is a downstream land-use or on adjacent land.

Indirect positive impacts will also be realised through the minimisation of flood risk on local amenity and biodiversity in cases of unexpected climatic events or where such amenity is a downstream land-use or on adjacent land, and where habitats are a downstream land-use or constitute adjacent land.

4.4.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

Climate change mitigation and adaptation was included at this stage as a statement in the Vision of the MLP, stating that 'Minerals Transportation, sites and facilities for mineral development will be planned, located and operated having regard to the need to mitigate and adapt to the impacts of climate change.' Although no alternatives were explored at this stage (where it can be considered that not including climate change mitigation and adaptation within the plan would be an unreasonable approach), the issue of climate change adaptation has evolved throughout the process, with each iteration acting as a less sufficient alternative than its predecessor.

Preferred Options Stage:

The wording for the climate change mitigation and adaptation issue in the Vision was reiterated at the Preferred Option stage. In addition to this the Vision also included climate change issues in a restoration and after-use statement where a focus of after-use will be to the enhancement of the local environment by means of increased provision for climate change (including providing storage for surface water).

Pre-Submission Draft Stage:

At the Pre-Submission Draft stage, the issue of climate change was expanded through a separate policy, regarding conditions for the applications for minerals development to demonstrate how they

will incorporate effective measures to minimise greenhouse gas emissions and to ensure effective adaptation and resilience to future climatic changes. This includes siting, location, design and transport arrangements, on-site renewable and low carbon energy generation, sustainable drainage systems on-site resilience to unexpected climatic events, the implications of coastal change, and the potential benefits from site restoration and after-use schemes. This approach can be considered as the only reasonable direction in line with the NPPF and the requirement of a presumption in favour of sustainable development.

4.4.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted that the statement would positively impact on the climate change sustainability criteria. It was recommended that it be rewritten to be more specific about how climate change mitigation or adaptation could occur (e.g. reduced transportation by road, creation of reservoirs, and protection of habitats).

The SA/SEA of the Preferred Approach MLP highlighted that both the climate change and restoration Vision statements will have a range of positive impacts on the Sustainability Objectives in regards to climate change and associated transport emission criteria.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, the progression to a Pre-Submission working draft saw numerous positive impacts on a range of sustainability criteria and this was progressed for the final Pre-Submission Draft MLP.

4.4.8 Impacts on Indicators

The implementation of Policy S3 is most likely to impact on the following SA/SEA indicators:

- Distance to 'Areas susceptible to surface water flooding'
- Number of vehicle movements generated by site operation.
- Congestion ratios of relevant routes.
- State of the site prior and post extraction
- Number of developments where a green travel plan is submitted as a condition of development.
- Control of emissions through the use of managed equipment and vehicles

4.4.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.5 Policy S4 Reducing the Use of Mineral Resources

All development proposals shall ensure that mineral waste is minimised and that minerals on development/ redevelopment sites are re-used and recycled, in order to reduce the need for primary minerals and the amount of construction, demolition, and excavation wastes going to landfill. This will be supported by joint working with strategic partners to ensure:

1. The use of best practice in the extraction, processing and transportation of primary minerals to minimise mineral waste,
2. The application of national and local standards for sustainable design and construction in proposed development,
3. The application of procurement policies which promote sustainable design and construction in proposed development, and
4. The maximum possible recovery of minerals from construction, demolition and excavation wastes produced at development or redevelopment sites. This will be promoted by on-site re-use/ recycling, or if not environmentally acceptable to do so, through re-use/ recycling at other nearby aggregate recycling facilities in proximity to the site.

4.5.1 Justification

This Plan aims to minimise the amount of mineral waste created from the extraction, processing, and transportation of minerals. It also intends that as much demolition, construction, and excavation waste is re-used or recycled as possible at development/ redevelopment sites, in order to provide a supply of recycled mineral products into the future. The following strategic policy is designed to increase the rate of aggregate re-use and recycling in Essex and provide the necessary mineral facilities to help achieve these aims. These are complementary to the approach set out above and they are relevant to all developments and district, borough and city local plans.

4.5.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	+	+	0	0	0	0	++	0	+	0	0
Medium Term	0	0	0	+	++	+	+	0	0	0	0	++	0	+	0	0
Long Term	0	0	0	0	++	0	0	0	/	0	0	++	/	0	0	0

4.5.3 Significant Effects

There will be positive impacts on the sustainable use of land where the maximum possible recovery of minerals from construction, demolition, and excavation waste produced at development or re-development sites are promoted by on-site re-use and recycling.

There will be significant positive impacts on the sustainable use of minerals and promoting the minerals supply hierarchy and the movement of minerals waste up the waste management hierarchy as a result of the entire policy, in reducing the use of minerals resources and promoting and making conditions for re-use and recycling.

There will be positive impacts on reducing the transportation of minerals as well as air quality and minimising the net emissions of greenhouse gases through on-site re-use and recycling where

possible and a general policy direction of reducing minerals miles. Also, the emissions associated with extraction are typically higher than with material recycling and re-use so the general policy direction will also contribute to a reduction in emissions.

In a broad sense, the jobs created in re-use, recovery and recycling can be seen to replace those lost to the equivalent primary extraction. Thus although there will be a certain degree of job creation in the County resulting from re-use and recycling, no impact on job creation has been predicted.

4.5.4 Temporal Effects

There may be uncertain long term impacts on landscapes and restoration in those instances where certain levels of inert (i.e. Construction and Demolition) mineral waste may be needed to restore landscapes to desired levels post working. This may not be possible with increased re-use and recycling, however it is acknowledged that the Plan should not be considering this, and the restoration hierarchy of low-level in the first instance (Policy S12) deals with this issue in a sustainable manner.

4.5.5 Secondary, Cumulative and Synergistic Effects

There may be indirect positive impacts on all environmental based sustainability objectives through a reduced need to allocate new sites for primary minerals. In addition to this, environmental impacts are minimised where re-use and recycling will not be allowed on site where they are likely.

4.5.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage it was explored how to minimise mineral consumption and avoid mineral waste by the efficient and sustainable use of minerals in construction, whilst maintaining and promoting high standards of development. An option to the promotion of efficient mineral use in construction in Essex was consulted upon, with no stated alternatives being deemed reasonable.

Additional options regarding aggregate recycling were explored, such as policy criteria for assessing non-strategic aggregate recycling sites (Option 10, exploring a business as usual approach or through additional criteria), how the MPA could promote recycling at redevelopment sites (Option 11), and whether the MPA should safeguard aggregate recycling sites (Option 12 - Safeguarding strategic aggregate recycling sites to ensure future recycled mineral supply). These issues are essential content of a minerals local plan, and questions for consultation were posed in the document. As such no reasonable alternatives can be drawn from this.

Preferred Approach Stage:

At this stage, options evolved to take into account the consultation responses of the Further Issues and Options MLP. Three alternatives were looked at in regards to reducing the use of minerals resources. The Preferred Approach looked at promoting sustainable construction practises, the efficient use of materials and the incorporation of a proportion of re-used, recycled or secondary aggregate in new projects. This approach was deemed reasonable as it was consistent with other local planning authorities in Essex promoting sustainable construction through policies in their LDFs and provides flexibility in implementation. ECC had also expressed its commitment to explore opportunities to purchase recycled materials in its Sustainable Procurement Strategy and in addition, a co-ordination of effort was seen as being central to effective spatial planning.

An alternative approach to this involved a higher standard of sustainable construction (using one or more of the codes or standards referred to in the main text) to be set out in the MLP in the expectation that it would become mandatory at the national level in due course. This was considered a reasonable alternative as it explored the notion of an aspirational standard that would have numerous benefits related to sustainable construction. However, no compelling case as to what standards or codes need to be specified in Essex came through consultation and there may be economic costs.

A second alternative was a 'do nothing' approach. This was considered reasonable where policy might be seen as reiterating certain elements of national policy to some degree. This was rejected where the MPA would not be taking any initiative to address sustainable construction sought as consistent with national policy at the time. Similarly, a reliance on national initiatives may not provide solutions that are flexible enough to address local characteristics / circumstances.

Pre-Submission Draft Stage:

Reducing the use of minerals resources, evolved into a strategic policy ensuring that all development shall ensure that mineral waste is minimised and that minerals on development/redevelopment sites are re-used and recycled, in order to reduce the need for primary minerals and the amount of construction, demolition, and excavation wastes going to landfill. This is supplemented by criteria regarding the use of best practice in the extraction, processing, and transportation of primary minerals, the application of national and local standards for sustainable design and construction, the application of procurement policies which promote sustainable design and construction; and the maximum possible recovery of minerals from construction, demolition, and excavation wastes produced at development or redevelopment sites.

4.5.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted the difficulty of appraising certain Options as expressed, however predicted beneficial impacts in identifying additional criteria for both assessing non-strategic aggregate recycling sites, and a business as usual approach.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach is adopted, with a recommendation that sustainable construction could be more clearly defined to eliminate uncertainty surrounding the impacts on environmental based indicators. Regarding an alternative approach of promoting a Code of Sustainable Construction above that required by national policy, it is highlighted there is little that the MLP itself can do to increase sustainable construction methods and that enforcing more stringent construction methods may also hinder the delivery of development due to higher grades of sustainable construction being more expensive to deliver. A 'do nothing' alternative had a range of negative impacts associated with the sustainability criteria.

The progression to a Pre-Submission working draft saw reducing the use of minerals resources evolve to achieve positive impacts across a range of sustainability criteria. Previous recommendations about sustainable construction definitions are satisfied with references to a number of national and local standards and policies to inform applicants. This was progressed for the final Pre-Submission Draft MLP.

4.5.8 Impacts on Indicators

The implementation of Policy S4 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Is the proposed development intended to be located within landscapes with a high sensitivity
- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised

4.5.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.6 Policy S5 Creating and Safeguarding a Network of Aggregate Recycling Facilities

The increased production and supply of recycled/secondary aggregates in the County is supported to reduce reliance on land-won and marine-won primary aggregates. The County's existing network of aggregate recycling facilities shall be maintained and expanded, wherever appropriate. In addition:

1. Existing Strategic Aggregate Recycling Sites (SARS) identified on the Policies Map and defined in the map in Appendix 9 will be safeguarded from development that might result in their closure earlier than their permission. There is a general presumption that existing SARS should remain in operation for the life of the permission.

2. The Local Planning Authority shall consult the Minerals Planning Authority for its views and take them into account before determining development proposals that would compromise the continued operation and potential of an existing SARS.

3. Proposals for new aggregate recycling facilities, whether non-strategic or in the form of SARS, should be located on the main highway network in proximity to the Key Centres of Basildon, Chelmsford, Colchester, and Harlow. Such proposals shall be permitted in the following preferred locations, provided they do not cause unacceptable highway harm, are environmentally acceptable and in accordance with other policies in the Development Plan for Essex :

a) on major demolition and construction sites (on a temporary basis),

b) within permanent waste management sites,

c) in commercial areas used for general industrial or storage purposes, subject to compatibility with neighbouring land-uses,

d) on appropriate previously developed land,

e) on current mineral workings and landfill sites provided the development does not unduly prejudice the agreed restoration timescale for the site and the use ceases prior to the completion of the site, and,

f) within major allocated or permitted development areas (as set out in the Development Plan for Essex).

4.6.1 Justification

The sustainable re-use and recycling of 'construction, demolition, and excavation' (CDE) waste makes an important contribution to the Essex economy, ensures a balanced supply of aggregates for the County and helps reduce the amount of re-usable 'materials' from being wasted and disposed to landfill. It avoids unnecessary primary mineral extraction and the disturbance that this entails. The County Council as both the minerals and waste planning authority positively encourages the re-use and recycling of CDE wastes through its development plan and operational policies, including through this Plan and the separate Waste Local Plan. It is essential that this Plan enables and encourages the construction industry and minerals industry to provide enough investment in creating and maintaining an effective network of aggregate recycling facilities/ sites across the County to meet demand.

4.6.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	0	0	0	0	0	+	++	0	+	0	0
Medium Term	0	0	0	+	++	0	0	0	0	0	+	++	0	+	0	0
Long Term	0	0	0	+	++	0	0	0	0	0	0	++	+	0	0	0

4.6.3 Significant Effects

There will be no impacts on environmental criteria and objectives, where it is stated that proposals will have to be environmentally acceptable.

There will be positive impacts on the sustainable use of land through the safeguarding of existing facilities, the expansion of them where required and the general presumption that existing SARS should remain in operation for the life of the permission.

The strategic approach to aggregate recycling directly accords with the objective of promoting the minerals supply hierarchy and the movement of minerals waste up the waste management hierarchy. In addition to this, it is noted that proposals for new aggregate recycling facilities, whether non-strategic or in the form of SARS are consistent with the corresponding policy detail in the emerging Waste Local Plan, and subsequent related policies throughout both the Minerals and Waste Local Plans.

Proposals for new aggregate recycling facilities, located in proximity to the key centres of Basildon, Chelmsford, Colchester and Harlow respond well to planned growth and large centres of population. There will therefore be positive impacts on maximising opportunities for job creation arising from minerals activities.

The strategic approach to aggregate recycling directly accords with the objective of improving the sustainable use of minerals. In addition to this, it is noted that proposals for new aggregate recycling facilities, whether non-strategic or in the form of SARS are consistent with the corresponding policy detail in the emerging Waste Local Plan, and subsequent related policies throughout both the Minerals and Waste Local Plans.

The network of aggregate recycling facilities and the proposals for new facilities to correspond to the main highway network and key centres of growth and population in the County, respond well to reducing the transportation of minerals and congestion.

4.6.4 Temporal Effects

There will be long term positive impacts on the sustainable use of land and restoration. It is noted that proposals for new aggregate recycling facilities will be permitted where they do not unduly prejudice the agreed restoration timescale for the site and the use ceases prior to the completion of the site.

4.6.5 Secondary, Cumulative and Synergistic Effects

There will be indirect positive impacts on air quality, minimising the emissions of greenhouse gases and reducing minerals transportation are associated with reducing mineral miles, transport distances and thus vehicle emissions.

Regarding restoration, proposals for new aggregate recycling facilities will be permitted where they do not unduly prejudice the agreed restoration timescale for the site and the use ceases prior to

the completion of the site, thus there are synergistic impacts with Policy S12 and good consistency between the two potentially conflicting policies.

There will be indirect positive impacts on human health and well-being where although proposals for new facilities will correspond to large centres of population in the County, the preferred location criteria responds well to distance new facilities away from expected housing areas.

There may be indirect positive impacts on amenity in certain proposals where new aggregate recycling facilities will be permitted where they do not unduly prejudice the agreed restoration timescale for the site and the use ceases prior to the completion of the site, in those cases where the after-use is to amenity.

Proposals for new aggregate recycling facilities will be permitted where they do not unduly prejudice the agreed restoration timescale for the site and the use ceases prior to the completion of the site, thus there are synergistic impacts with Policy S12 in regards to beneficial restoration.

4.6.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage the MLP set out 3 methods by which optimising the production and use of recycled aggregates can be achieved. These were by increasing on-site recycling on redevelopment sites, establishing a network of strategic aggregate recycling facilities, and by promoting and maintaining a spread of smaller non-strategic aggregate recycling sites across the County. These were deemed reasonable alternatives in line with The Strategy and minimising minerals miles in various ways.

Preferred Options Stage:

At this stage the preferred approach was to provide a network of permanent and long term temporary recycling facilities able to make significant and long term contributions to recycled aggregate production with the only safeguarding being the Strategic Aggregate Recycling Sites (SARS) in proximity to key urban areas, with an additional SARS in or around Harlow. There would also be a criteria based policy at appropriate industrial areas and as temporary permissions at mineral workings and waste disposal sites. This approach was deemed reasonable through a desire to minimise mineral miles and was progressed where the SARS network in proximity to 'Key Centres for Development and Change', was considered the best means for the MPA to promote raising the quality of recycled products and provide for economies of scale.

An alternative approach looked at a criteria only based approach to aggregate recycling to promote strategic and non-strategic aggregate recycling sites. This was deemed a reasonable alternative as it theoretically aimed to identify the best and most suitable sites possible. The alternative was rejected where it is difficult to find suitable sites for aggregate recycling, particularly in areas without existing mineral sites. In addition to this; by not safeguarding sites there is a risk that existing aggregate recycling sites would be displaced by higher value land uses over the course of the Plan period, and many consultation responses noted the lack of geographic coverage of the three sites proposed in the Further Issues and Options paper (2009). Finally, in not delivering a site specific safeguarding approach the alternative is considered less consistent with PPS20.

Pre-Submission Draft Stage:

The Pre-Submission Draft stage policy on aggregate recycling facilities seeks to maintain and expand the existing network of aggregate recycling facilities in addition to safeguarding SARS, requiring LPAs to consult the MPA in regards to determining applications that could compromise the SARS, and detailing a 'criteria based' approach to new strategic or non-strategic aggregate recycling facilities. The policy has also been updated to be complimentary with the content of the emerging Waste Local Plan. This is deemed a reasonable approach in line with the NPPF and a presumption in favour of sustainable development.

4.6.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP only appraised the element of the option regarding the network of strategic aggregate recycling facilities highlighting positive impacts on sustainability by improving the sustainable use of minerals, and on the minerals hierarchy through the safeguarding of strategic recycling sites, however potential negative impacts on transport may arise if no further strategic sites are developed as there is at present an uneven distribution of sites across the county.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach be adopted where a strategic distribution of recycling sites at urban areas will ensure that overall mineral transportation across the County from start to end use is reduced relative to any other approach. A purely criteria led allocation policy advocated by the alternative approach was said to have ambiguity in the final spatial distribution of aggregate recycling centres and as such transport distances cannot be quantified, affecting both emissions and the economic viability of recycling.

The progression to a Pre-Submission working draft saw positive impacts across a range of sustainability criteria with just a small amount of uncertainty as to how aggregate recycling facilities are perceived by communities in terms of reducing transportation miles to the key centres of Basildon, Chelmsford, Colchester and Harlow (as centres of the greatest population). This was progressed for the final Pre-Submission Draft MLP.

4.6.8 Impacts on Indicators

The implementation of Policy S5 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised

4.6.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.6.10 Information on the Appraisal of Existing Strategic Aggregate Recycling Sites (SARS)

The SARS highlighted for safeguarding in the policy are all in current operation and safeguarded from development that might result in their closure earlier than their permission. There are three existing SARS operating in the County, located at Purdey's Industrial Estate, Rochford; Bulls Lodge Quarry, Boreham; and Stanway Quarry, Colchester. SARS have a long term status or permanence during the plan-period, as either permanent permissions or long term temporary permission within mineral workings and occupy suitable sites/ buildings in both planning and transport terms. As such an appraisal of these sites has not been necessary.

4.7 Policy S6 Provision for Sand and Gravel Extraction

The Mineral Planning Authority shall endeavour to ensure reserves of land won sand and gravel are available, sufficient for at least 7 years extraction or such other period as set out in national policy, taking into account the local annual supply requirement for Essex. This requirement will be periodically assessed.

The Plan identifies sufficient provision through Preferred Sites allocations (listed in Table 5) until 2029 and will be subject to periodic review to enable the maintenance of at least a seven year landbank.

Proposals for mineral extraction on non-Preferred Sites will be resisted by the Mineral Planning Authority unless the applicant can demonstrate:

- a) An overriding justification and/ or overriding benefit for the proposed extraction, and,
- b) The scale of the extraction is no more than the minimum essential for the key purpose of the proposal, and,
- c) The proposal is environmentally suitable, sustainable, and consistent with the relevant policies set out in the Development Plan.

4.7.1 Justification

Landbanks are mechanisms for securing and maintaining mineral supplies at the County level. They work by reflecting the time taken to obtain planning permissions and bring sites into production. The extent of the landbank provides a useful indicator for deciding when new permissions for extraction are needed.

Policies providing for the maintenance of sufficient landbanks are an important feature of this Plan. They enable the minerals industry to respond speedily to changes in market demand, and also provide a secure long-term, steady and adequate supply of permitted mineral reserves to justify capital investment in plant, machinery and manufacturing capacity. They also enable the wider planning and environmental consequences of long term provision to be considered in an orderly, timely, and effective way through periodic reviews of this Plan.

4.7.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	0	0	0	0	0	++	++	0	0	0	0
Medium Term	0	0	0	+	++	0	0	0	0	0	++	++	0	0	0	0
Long Term	0	0	0	+	++	0	0	0	0	0	++	++	0	0	0	0

4.7.3 Significant Effects

There will be no direct impacts on any environmental objectives. It is possible that the apportionment figure will increase the amount of sites for primary extraction above alternative figures which could have negative environmental impacts in comparison, however at this point, and with periodical assessment, it is not definite whether sites identified in the landbank will actually be brought forward for extraction.

There will be positive impacts on the sustainable use of land where the landbank allows for mineral resources to be identified at this stage for a best case economic scenario.

Maintaining land banks and committing to a periodical assessment of the MLP directly accords with the minerals supply hierarchy and the sustainable use of minerals. A properly maintained landbank secures and maintains mineral supplies, and the approach of the MLP allows for flexibility in preparing for a best case economic scenario. This is in conformity of the overarching goal of the minerals supply hierarchy which is stated as the ensuring of a steady and adequate supply of minerals through the plan period. The wider programme of periodical assessment stipulated in the policy would have the effect of assuring that economic changes both within the County and London are not negatively impacting on a variety of economic, social and environmental factors in Essex, and these factors are considered at the plan preparation stage.

The policy will have significant positive impacts on maximising opportunities for economic development. In ensuring reserves for sand and gravel are based on a 7 year apportionment as specified in the LAA and consistent with previous sub-national apportionments, there will be a supply of minerals that surpasses that based on a rolling average of 10 years sales data by approximately 0.75mtpa. This approach supports economic growth by allowing for and supporting any economic upturn in the County and London. Review periods in which to reassess apportionments relevant to identified needs and changing situations allows a flexible approach and can respond to any significant oversupply or undersupply in land banks / apportionments should they be apparent.

4.7.4 Temporal Effects

No temporal effects have been identified as a result of this policy.

4.7.5 Secondary, Cumulative and Synergistic Effects

There will be positive synergistic impacts on biodiversity, restoration and after-use and amenity in conjunction with Policy S12 regarding the opportunities for after-use and restoration from sand and gravel extraction.

Although it is possible that there will be future cumulative impacts on Policy S6 with Policy IMR1, at this stage it is impossible to determine whether these will be positive, negative or changeable from the current direction and methodology regarding the sand and gravel apportionment and landbank.

4.7.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage options for the management and maintenance of the landbank were looked at. These were, a partial review of the Plan based upon land won sand and gravel only (Option 17), and three options on a whole and partial review of the plan/landbank (Option 18) consisting of a 7 year landbank based on the agreed sub-regional apportionment, a combined provision of both the landbank and outstanding "planned provision" still to come forward up to 10 years, and a landbank based on a 5 year review from the plan's adoption. Elements of the single 7 year landbank for sand and gravel, and a 5 year review were taken forward to the preferred approach stage of the MLP. The alternatives were considered reasonable in line with the different methods of calculating required apportionment figures and landbanks of sub-national figures, planned provision and reviews of the plan.

Preferred Options Stage:

At this stage, the preferred approach was to maintain a single County-wide land-bank of at least 7 years for sand and gravel based on the County apportionment and site specific landbanks of 10 years for Martells silica sand and 25 years for Bulmers and Marks Tey brick clay sites. In addition, the MLP will be reviewed either within 5 years of adoption as part of a 'plan, monitor, manage' approach to planning, or should the sand and gravel land-bank fall below 7 years; whichever comes sooner. This was considered reasonable and progressed where a single landbank for the

whole sand and gravel resource was viewed as the most practical way forward for the MLP. It would appear unnecessary and impractical to propose separate landbanks for different geographic areas or distinguish building sand and concreting aggregates.

An alternative approach was explored to partially review the Plan based on land won sand and gravel only. This was deemed reasonable as sand and gravel are the most prominently extracted minerals in the county. This was rejected however where it would not address any important changes to national or regional policy during the Plan period, and the focus of any review would rest on primary extraction.

Pre-Submission Draft Stage:

The provision for sand and gravel extraction has continued to follow the 7 year landbank approach as per sub-national targets; with additional criteria for proposals for mineral extraction on non-preferred sites should they be viable in the future. This is deemed reasonable as it adheres to national policy regarding landbanks not primarily consisting of a few key large allocations. The review and monitoring element of the policy as it appeared in previous iterations has been moved into a separate policy, IMR1.

4.7.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP for Options 17 and 18 stated that neither was able to be appraised under the sustainability criteria at that stage.

The SA/SEA of the Preferred Approach MLP recommended that the preferred approach be adopted as it would have a strong positive effect on the sustainable use of minerals whilst also having a positive impact on the other Sustainability Objectives. It was recommended however that contributions towards the notion of sustainable transport could be made by ensuring that landbanked material is distributed around the County. The alternative approach was seen to be a contravention to guidance from Central Government which stipulates that planning policies should be reviewed and monitored to ensure that the direction facilitated by policy is the one which was intended.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team a SA/SEA of a Pre-Submission working draft saw the Plan's approach to the provision for sand and gravel extraction having positive impacts on a range of sustainability criteria. The policy promotes a flexible approach, in terms of new site proposals as well as the scale/landbank to respond to future development, particularly in line with the spatial strategy and centres for growth in the plan area. This approach was therefore progressed for the final Pre-Submission Draft MLP.

4.7.8 Impacts on Indicators

The implementation of Policy S6 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

4.7.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.8 Policy S7 Provision for Industrial Minerals

Any proposals for industrial minerals in the County will be considered as follows:-

Silica Sand Extraction:

Provision is made for a site extension at Martells Quarry, Ardleigh to maintain an appropriate minerals landbank for silica sand of at least ten years during the plan-period as defined in policy P2.

Brick Clay Extraction:

A minerals landbank of at least 25 years of brick-making clay will be maintained at the following brickworks:-

- Marks Tey and Bulmer through the extraction of remaining permitted reserves.

The extracted brick-making clay from Bulmer Brickworks and Marks Tey respectively should be used to support the brickworks in that locality only, as defined on the Policies Map.

Chalk Extraction:

The small-scale extraction of chalk will only be supported for agricultural and pharmaceutical uses at Newport Quarry as identified within the Policies Map. Extraction of chalk for other uses, such as aggregate, fill material or for engineering will not be supported.

Proposals for the extraction of industrial minerals on non-Preferred Sites will be permitted where:

- The reserves comprising the landbank are insufficient and/ or there is some other over-riding justification or benefit for the release of the site, and
- The proposal would be environmentally acceptable.

4.8.1 Justification

The National Planning Policy Framework requires the maintenance of at least a ten year landbank to safeguard investment and continued production at existing silica sand extraction sites. The National Planning Policy Framework requires the maintenance of at least a 25 year landbank at both sites. The operators at Marks Tey have confirmed that there is already enough permitted capacity on their site to provide for the necessary landbank during the plan-period. There is no extraction of brickearth within the County at the present time but there is no compelling reason why it could not be extracted economically at some point in the future. The Plan does not make any site-specific allocations for this mineral. Although one chalk extraction site exists in Essex, and is considered to be sufficient to meet current and future demand, new proposals for the small-scale extraction of chalk may still be promoted during the plan-period. Therefore a policy framework that allows planning applications to be considered on their individual merits is still necessary.

4.8.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	0	0	0	0	0	+	++	0	0	0	0
Medium Term	0	0	0	+	++	0	0	0	0	0	+	++	0	0	0	0
Long Term	0	0	0	+	++	0	0	0	0	0	+	++	0	0	0	0

4.8.3 Significant Effects

There will be no impact on environmental objectives through the identification of existing sites to meet the required landbanks for industrial materials. Any impacts related to the site extension at Martells Quarry, Ardleigh will be highlighted in the relevant site appraisal (B1) documented in this Environmental Report and summarised in the appraisal of Policy P2. In addition, any non-preferred sites that come forward will have to demonstrate conformity with the various development management criteria in Policy DM1.

There will be positive impacts on the sustainable use of land where sites for industrial extraction have already been identified and/or have already received permission. In addition to this, proposals for the extraction of non-preferred sites will be permitted where reserves comprising the landbank are insufficient and/or there is some other overriding justification or benefit for the release of the site and the proposal would be environmentally acceptable.

Maintaining adequate landbanks for 10 years of silica sand and 25 years of brick clay extraction directly accords with the objectives of promoting the minerals supply hierarchy and improving the sustainable use of minerals. A properly maintained landbank secures and maintains mineral supplies. This is in conformity of the overarching goal of the Minerals Supply Hierarchy which is stated as the ensuring of a steady and adequate supply of minerals through the plan period.

There will be no significant additional impacts in regards to job creation as all preferred industrial minerals sites are existing sites, except for the site extension at Martells Quarry, Ardleigh (B1). Despite this the maintenance of the landbanks will ensure that there is an adequate supply of industrial materials to support economic growth in the County, affording positive effects. In addition to this, proposals for the extraction of non-preferred sites will be permitted where reserves comprising the landbank are insufficient and/or there is some other overriding justification or benefit for the release of the site and the proposal would be environmentally acceptable.

4.8.4 Temporal Effects

No temporal effects have been identified as a result of this policy.

4.8.5 Secondary, Cumulative and Synergistic Effects

There will be cumulative positive impacts on the sustainable use of land where existing and preferred sites will be safeguarded through the MSA and 250m MCA consultation zone as specified in Policy S8.

4.8.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage of the Further Issues and Options MLP, it was explored whether brickearth, brickclay and silica sand sites should continue to be protected and planned for, within a Vision statement.

No reasonable alternatives could be identified beyond whether or not sites for industrial minerals should be planned.

Preferred Options Stage:

At this stage it was stated in a Vision statement that primary extraction sites will have regard to numerous environmental criteria and that brick clay, brickearth and silica sand sites will continue to be protected and planned for. Under the Core Objectives of the plan, it was also covered that chalk, silica sand, brickearth and brick clay will be identified and safeguarded to avoid unnecessary sterilisation as they have potential future economic and/ or conservation value. There were no other reasonable alternatives at this stage.

Pre-Submission Draft Stage:

The Pre-Submission Draft stage policy on the provision for industrial minerals progresses the preferred approach by identifying provision for silica sand, brick clay and chalk extraction and also in line with paragraph 146 of the NPPF.

4.8.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted negative impacts being identified for planning and protecting brick earth, brick clay and chalk due to deposits being small and sparse and may be a hindrance to development.

The SA/SEA of the Preferred Approach MLP highlighted positive impacts across a range of sustainability objectives, in particular for economic development and sustainable mineral use.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team the progression to a Pre-Submission working draft lead to an assessment of positive impacts on a range of sustainability criteria. The policy promoted a flexible approach, in terms of new site proposals, which responds well to Policy S1. This approach was progressed for the final Pre-Submission Draft MLP.

4.8.8 Impacts on Indicators

The implementation of Policy S7 is most likely to impact on the following SA/SEA indicators:

- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

4.8.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.9 Policy S8 Safeguarding Mineral Resources and Mineral Reserves

By applying Mineral Safeguarding Areas (MSAs) and/ or Mineral Consultation Areas (MCAs), the Mineral Planning Authority will safeguard mineral resources of national and local importance from surface development that would sterilise a significant economic resource or prejudice the effective working of a permitted mineral reserve or Preferred Site allocation within the Minerals Local Plan. The Minerals Planning Authority shall be consulted, and its views taken into account, on proposed developments within MSAs and MCAs except for the excluded development identified in Appendix 9.

Mineral Safeguarding Areas

Mineral Safeguarding Areas are designated for mineral deposits of sand and gravel, silica sand, chalk, brickearth and brick clay considered to be of national and local importance, as defined on the MSAs Policies Map in Appendix 10.

The Mineral Planning Authority shall be consulted on:

- a) all planning applications for development on a site located within an MSA that is 5ha or more for sand and gravel, 3ha or more for chalk and greater than 1 dwelling for brickearth or brick clay; and
- b) any land-use policy, proposal or allocation relating to land within an MSA being considered by the Local Planning Authority for possible development as part of preparing a Local Plan (with regard to the above thresholds).

Non Mineral proposals that exceed these thresholds shall be supported by a minerals resource assessment to establish the existence or otherwise of a mineral resource of economic importance.

If, in the opinion of the Local Planning Authority, surface development should be permitted, consideration shall be given to the prior extraction of existing minerals.

Mineral Consultation Areas

MCAs are designated within and up to an area of 250 metres from each safeguarded permitted minerals development and Preferred Site allocation as shown on the Policies Map and defined on the maps in Appendix 10. The Mineral Planning Authority shall be consulted on:

- a) Any planning application for development on a site located within an MCA except for the excluded development identified in Appendix 9,
- b) Any land-use policy, proposal or allocation relating to land within an MCA that is being considered as part of preparing a Local Plan.

Proposals which would unnecessarily sterilise mineral resources or conflict with the effective workings of permitted minerals development or Preferred Mineral Site allocation shall be opposed.

4.9.1 Justification

Minerals are a finite natural resource which must be used prudently and conserved so that there are adequate resources for future generations. Known locations of mineral resources of national and local importance need to be protected and safeguarded to ensure long-term security of minerals supply, and to ensure their presence is factored into decisions about future land-use when proposals for other development arise.

4.9.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	++	++	0	0	0	0	0	+	++	0	0	0	0
Medium Term	0	0	0	++	++	0	0	0	0	0	+	++	0	0	0	0
Long Term	0	0	0	++	++	0	0	0	0	0	+	++	0	0	0	0

4.9.3 Significant Effects

There will be positive impacts on the sustainable use of land where the policy ensures the non-sterilisation of minerals. Such an approach would increase the overall land bank in conformity with apportionment figures and secure minerals that would otherwise be lost. The policy works on a strategic level, but also specifically to localities where MCAs require consultation from the MPA in specific circumstances. This approach, also corresponds to a need for flexibility, subject as it is, to updates from monitoring arrangements.

This policy directly accords with the notion of safeguarding mineral resources. Minerals saved from sterilisation will contribute to the county landbank and reduce the need for primary extraction in other more marginal localities should they be required to reflect future relevant economic changes and planned growth.

There will be no impact on enabling all sections of the community to participate fully at all stages of the MLP. Despite this, an effective way of disseminating information would be required to ensure that the public is aware of any potential extraction at non-preferred sites.

There will be economic benefits from this policy where minerals saved from sterilisation will contribute to the county landbank and can reflect future relevant economic changes and any planned growth. Flexibility is also a positive impact under the criterion regarding monitoring updates.

The policy directly accords with the objective to improve the sustainable use of minerals as it states that prior extraction would be considered should a deposit be at risk of sterilisation. This would make maximum use of those minerals available in the county and the consultation arrangements surrounding MCAs affords a flexible approach.

4.9.4 Temporal Effects

No temporal effects have been identified as a result of this policy.

4.9.5 Secondary, Cumulative and Synergistic Effects

Indirect positive impacts may occur on all environmental objectives where minerals saved from sterilisation will contribute to the county landbank and reduce the need for primary extraction in other more marginal localities which may require environmental considerations.

There may be indirect positive impacts on human health and well being through the prior safeguarding of deposits, and the element of MCAs that seeks to protect resources from inappropriate development within 250m. Whilst MCAs are predominantly concerned with the non-sterilisation of resources, it may also have the indirect benefits of mutually separating inappropriate land uses, including those associated with nuisance and transport arrangements.

4.9.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage, numerous options were looked at to safeguard minerals resources and reserves. These were an option defining MSA boundaries (Option 13), an option stating scales of development within an MSA requiring consideration of prior extraction by the applicant (Option 14, stating in excess of 10ha for sand and gravel, all development unless within a residential curtilage for brickearth and brick clay, and 3ha for chalk), an option on the provision of information relating to prior extraction potential to be submitted with an application (Option 15), and an option on the protection of permitted and identified mineral reserves through MCA designation (Option 16). Alternatives were based on the responses to these core issues post-consultation.

Preferred Options Stage:

At this stage the preferred approach was that the MPA would consider prior extraction as a windfall before alternative development occurs on sites greater than 5ha for sand and gravel, 3ha for chalk and greater than a single residential curtilage for brickearth or brick clay. The MPA would also oppose incompatible development within 250m of a permitted and / or preferred mineral allocation site, and the applicant would be expected to provide information to determine what quality and quantity of deposit would be capable of being economically worked. This approach was progressed and considered reasonable as it was consistent with government policy, built on lessons learnt from safeguarding brick-earth in the previous MLP, and setting a distance of 250m is a pragmatic means of protecting existing or potential workings from incompatible activities.

An alternative approach was to delineate the economic mineral resource around preferred sites only. The MPA would seek consideration of prior extraction before any incompatible development at such sites could occur and would oppose inappropriate development within 250m of a preferred mineral allocation site. This was deemed a reasonable alternative where it sought to safeguard resources of county-wide importance in terms of apportionment. It was rejected where at the time, the change in national policy with MPS2 was to avoid a narrow definition to just mineral sites needed to make up an apportionment. In addition to this the alternative approach may miss opportunities for prior extraction beyond preferred sites which would otherwise require extensive investigation works, allow mineral resources to be sterilised, and also result in a need for aggregate to be bought in from elsewhere.

Pre-Submission Draft Stage:

The Pre-Submission Draft stage policy includes MSAs for silica sand, to avoid the sterilisation for all indigenous mineral resources. The MSA for brickearth and brickclay is also amended to greater than 1 dwelling, rather than any residential curtilage. The policy also seeks to safeguard resources from sterilisation from other development through MCAs and close working with LPAs. This is considered reasonable in line with paragraph 143 of the NPPF.

4.9.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted negative impacts on economic development through impeding development as a result of defining MSA boundaries. Regarding scales of development within an MSA requiring consideration of prior extraction by the applicant in terms of brickearth and brickclay would both promote negative impacts where any development may threaten them and lead to sterilisation. A 250m MCA 'buffer' around extraction sites, would have positive impacts on minerals and sustainability, however negative impacts on economic development.

The SA/SEA of the Preferred Approach MLP recommended the Preferred Approach to be adopted; according with the sustainable use of land and with the minerals supply hierarchy. These positives would be eliminated by adopting the alternative approach of delineating around preferred sites only. It was recommended that sufficient information is released in an inclusive fashion to alert local residents to the possibility of mineral extraction occurring before a site is developed for its end use.

The progression to a Pre-Submission working draft saw the safeguarding of mineral resources and reserves to evolve to be more descriptive. There will be positive impacts against a range of sustainability criteria through the MSAs, and where the Mineral Planning Authority's consultation will be required of potentially conflicting proposals in designated MCAs in regards to all elements of the Minerals Local Plan. This was progressed for the final Pre-Submission Draft MLP, with added emphasis on sterilisation in regards to MCAs, and under clearer circumstances what stance the MPA will take during consultation with LPAs.

4.9.8 Impacts on Indicators

The implementation of Policy S8 is most likely to impact on the following SA/SEA indicators:

- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Facilities within 100metres of residential areas
- Residential developments be within 100metres of sources of noise and vibration

4.9.9 Proposed Mitigation Measures / Recommendations

It is recommended that an effective way of disseminating information would be required to ensure that the public is aware of any potential extraction at non-preferred sites.

4.10 Policy S9 Safeguarding Mineral Transshipment Sites and Secondary Processing Facilities

The following mineral facilities identified on the Policies Map are of strategic importance and shall be safeguarded from development which would compromise their continued operation.

Safeguarded Transshipment Sites:

- a. Chelmsford Rail Depot
- b. Harlow Mill Rail Station
- c. Marks Tey Rail depot
- d. Ballast Quay, Fingringhoe (safeguarding to apply only up to the end of mineral extraction at the nearby Fingringhoe Quarry)
- e. Parkeston Quay East, Harwich (potential operation)

Safeguarded Coated Stone Plant:

- f. Suttons Wharf, Rochford
- g. Stanway, Colchester
- h. Wivenhoe Quarry
- i. Bulls Lodge, Chelmsford
- j. Essex Regiment Way, Chelmsford
- k. Harlow Mill Rail Station

The Local Planning Authority shall consult the Mineral Planning Authority and take account of its views before making planning decisions on all developments within 250 metres of the above facilities as defined in the maps in Appendices 8 and 10. Where planning permission is granted for new rail or marine transshipment sites and coated stone plant of strategic importance, those sites will also be safeguarded so that their operation is not compromised. The safeguarding of a strategic plant is for the life of the planning permission or where located in a mineral working, until completion of extraction.

The Local Planning Authority shall consult the Mineral Planning Authority for its views and take them into account on proposals for development within the Mineral Consultation Area surrounding each of these safeguarded sites, as identified on the Policies Map, before making planning decisions on such proposals.

4.10.1 Justification

The National Planning Policy Framework (March 2012) states that MPAs when preparing their local plans should include policies to safeguard:

- Existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials, and

- Existing, planned and potential sites for concrete batching, the manufacture of coated materials, and other concrete products and the handling, processing and distribution of recycled and secondary aggregate material.

4.10.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	++	0	++	++	0	0	0	++	+	0	++	0	0
Medium Term	0	0	0	++	0	++	++	0	0	0	++	+	0	++	0	0
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4.10.3 Significant Effects

There will be positive impacts on the sustainable use of land where safeguarded sites are on existing sites, or in the case of Ballast Quay, Fingringhoe use shared infrastructure with and shall only be safeguarded until, the end of the mineral extraction at the nearby Fingringhoe Quarry. This corresponds to a sustainable use of land.

The effect on air quality would be positive. The protection of transshipment sites would allow for the continued transport of minerals by rail and sea. Such forms of transport produce relatively smaller amounts of fine particulates and emissions than road transport for an equivalent weight carried. There is the recognition that making provision for further transshipment facilities could be required along with the need to safeguard existing facilities. Such a stance would have a positive effect on air quality relative to relying solely on the road network or, in the case of a lack of safeguarding, increasing this reliance.

The effect on minimising emissions from minerals activities would be positive. The protection of transshipment sites would allow for the continued transport of minerals by rail and sea. Such forms of transport produce relatively smaller amounts of fine particulates and emissions than road transport for an equivalent weight carried. There is the recognition that making provision for further transshipment facilities could be required along with the need to safeguard existing facilities. Such a stance would have a positive effect on air quality relative to relying solely on the road network or, in the case of a lack of safeguarding, increasing this reliance.

There is a positive effect to safeguarding transshipment sites on maximising economic development. Whilst the impact on employment would be minimal, transshipment sites are imperative for facilitating wider economic goals and rail and sea transportation will have beneficiary effects of economies of scale. Essex is an exporter of aggregate and uses existing transshipment sites to some extent in moving extracted material to London and other markets. The recognised need to safeguard existing sites as well as recognise a potential for further sites accords a strongly positive assessment. In addition to this the safeguarding of coated stone plants responds directly to national policy to support planned and future growth in the County.

The effect on promoting sustainable transport use would be positive. The protection of transshipment sites would allow for the continued transport of minerals by rail and sea. There is also the recognition that making provision for further transshipment facilities could be required along with the need to safeguard existing facilities. Such a stance would have a positive effect on this objective relative to relying solely on the road network or, in the case of a lack of safeguarding, increasing this reliance..

4.10.4 Temporal Effects

No long term effects have been identified for this policy where impacts exist only for the entirety of the plan period.

4.10.5 Secondary, Cumulative and Synergistic Effects

There will be positive cumulative impacts on safeguarding air quality, minimising transport emissions and sustainable transport objectives in conjunction with Policy S11.

4.10.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At the further Issues and Options stage, two isolated options were considered regarding the safeguarding of transshipment sites; the safeguarding of mineral transshipment facilities, and the designation of 250m Mineral Consultation Areas around mineral transshipment facilities. These were considered reasonable in line with national policy and the sustainable transportation of minerals. Elements of both these options were progressed to the preferred approach stage.

Preferred Approach Stage:

At this stage the MPA looked to safeguard the rail heads and wharfage facilities of Chelmsford, Marks Tey, Harlow Mill, Port of Harwich and, while extraction continues, Fingringhoe. Once permitted reserves are exhausted the site is no longer to be safeguarded for this use. It was also proposed that proposals for other development within 250m of these rail heads and wharfage facilities should demonstrate that they would not prejudice or be prejudiced by those facilities. This was deemed a reasonable approach in line with national policy and the need for the sustainable transportation of minerals. It was progressed as retaining existing rail heads, wharfage and associated storage, handling and processing facilities and making provision for new facilities, where necessary, is considered vital to secure the long distance movement of minerals. Also, given the proximity of London, it is inevitable that aggregates produced in Essex will also serve this market and beyond. This aspect forms part of the future demand modelling that feeds into the apportionment.

An alternative explored was the permanent safeguarding of existing rail heads and wharfage considered to be of strategic importance for the maintenance of existing mineral infrastructure for the supply of aggregates needed in Essex. Their safeguarding needs to be continued to prevent their conversion to other uses, in the possibility of such proposals for other development being made; however it is not considered a reasonable alternative to permanently safeguard existing mineral transshipment infrastructure as the consequences could be significant and irreversible.

Pre-Submission Draft Stage:

For the Pre-Submission Draft stage, the policy has evolved into safeguarding mineral transshipment sites for the life of the planning permission or where located in a mineral working, until the completion of the site, through a flexible non-restrictive approach of MCAs. The policy also includes the safeguarding of coated stone plants in the same way to reflect their strategic importance. In Essex a 'strategic' plant for coated stone is considered to be a facility essential to the delivery of a critically important service and/ or one which enables delivery of an essential infrastructure project over the longer term. This approach is considered reasonable and has been progressed to safeguard sites/uses of strategic importance to sustainable and economic development, in line with paragraph 143 in the NPPF.

4.10.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted that the safeguarding of mineral transshipment facilities was not appraisable under the SEA criteria. In appraising the designation of Mineral Consultation Areas around mineral transshipment facilities highlighted positive impacts are associated with the safeguarding of transshipment facilities, thus reducing road related emissions,

although a negative impact associated with economic development due to the fact that the MCA may impede development in the area. An option of no MCA around transshipment facilities had uncertain impacts; although an MCA buffer area around the transshipment facilities would safeguard these areas, it is not certain that the lack of an MCA would lead to an increased reliance on road transportation. There would be no negative impact on economic development however as there would not be any obstruction to development near the transshipment facilities.

The SA/SEA of the Preferred Approach MLP highlighted that there would be no impact on the majority of sustainability objectives under the preferred approach, although the impacts that it does have are strongly positive where the protection of transshipment sites would allow for the continued transport of minerals by rail and sea. There would also be a positive economic effect to safeguarding transshipment sites as they are imperative for facilitating wider economic goals.

The progression to a Pre-Submission working draft saw the Plan's Objectives evolve to include coated stone plants as strategically important under paragraph 143 of the NPPF. As such there will be positive impacts across a range of sustainability criteria; the policy benefiting from a flexible approach in regards to individual sites under the MCA approach and not being overly dependant on policy conditions or restrictions. The policy works well alongside Policy S1 and the NPPF. This was progressed for the final Pre-Submission Draft MLP.

4.10.8 Impacts on Indicators

The implementation of Policy S9 is most likely to impact on the following SA/SEA indicator:

- Tonnage transported by means other than road.

4.10.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.10.10 Information on the Appraisal of Coated Stone Plants

The coated stone plants highlighted for safeguarding in the policy are all in current operation and either have permanent planning permissions, or are plants within existing quarries with temporary permissions which will cease upon completion of the mineral working. As such an appraisal of these sites has not been necessary.

4.10.11 Information on the Appraisal of Mineral Transshipment Sites

The sites at Chelmsford Rail Depot (Site F2 in Appendix 8 of the MLP), Harlow Mill Rail Station (Site F1), Marks Tey Rail Depot (Site F3), and Parkeston Quay East, Harwich (Site F4) are all existing safeguarded sites as from the previous Minerals Local Plan and thus their continued safeguarding has not been subject to Sustainability Appraisal.

Of the mineral transshipment sites listed for safeguarding in this policy, only that of Ballast Quay, Fingringhoe (Site D2) has been subject to Sustainability Appraisal as a new site to be safeguarded. In addition to this, 'alternative' sites for transshipment have also been appraised.

The appraisal of the preferred transshipment site can be seen in the following sub-sections. The methodology used for these appraisals can be located in Annex C: Sustainability Framework and is the same as that for the appraisals of the sand and gravel and industrial minerals sites as found in Chapter 5 of this Environmental Report.

4.10.12 Appraisal of New Transshipment Site (D2 Ballast Quay, Fingringhoe)

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
D2	SM	1	0	-1	2	0	1	1	1	1	0	/	0	/	2	-1	-1
	L	/	0	/	/	0	0	0	0	/	0	/	0	/	0	/	/

Significant Effects:

Site D2 will have significant positive impacts with regards to transport and agricultural land. Positive impacts will be realised regarding biodiversity, air quality, greenhouse gas emissions, the historic environment and landscape. There will be negative impacts on flood risk, health and well-being and nuisance.

Temporal Effects:

There will be no positive or negative long term impacts as a result of the site for transshipment due to the length of the permission. Post-plan period any impacts will either not be valid or uncertain.

Progress through the SA/SEA Process

The Pre-Submission Draft MLP has been the first stage in the plan-making process where transshipment sites have been subject to Sustainability Appraisal.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Secondary, Cumulative and Synergistic Effects of Central Area Sites

There will be no secondary, cumulative or synergistic impacts through the selection of this site for transshipment.

4.10.13 Alternatives Considered for Transshipment Sites and the Reasons for their Rejection / Selection

In response to a 'call-for-sites' in 2005, numerous transshipment sites came forward from site promoters. It must be considered that all sites coming forward from this process be considered reasonable alternatives, prior to assessment. These sites have been fully appraised for the Pre-Submission Draft stage MLP in the same manner and to the same level of detail as the preferred site. For the detailed appraisals of these sites please see Annex E: Site Appraisals accompanying this report. The alternatives are detailed in the following table, along with a summary of the reasons for their non-selection.

Table 5: Alternative 'Non-Preferred' Transshipment Sites in the County

Site	Reasons for Non-Selection
Site D3 Sadds Wharf, Maldon	The site has seen a recent outline planning permission which was allowed on appeal for a mixed use development comprising 93 residential, office and leisure accommodation. As such, use of the site for a transshipment facility is considered to be undeliverable.
Site D5 Brightlingsea Quarry, Tendring	Significant negative impacts on biodiversity and landscape where the site cuts across the edge of a SSSI and an SPA. Further, proposals for

	<p>new extraction sites at Thorrington (A21 and A34) are not Preferred Sites and as such the facility is unlikely to be deliverable.</p>
Site D6 Ardleigh Rail Sidings	<p>It is considered that it is not possible to safeguard this site for use as a transshipment site due to potentially significant impacts on proximity to sensitive uses and access that it was assessed could not be mitigated.</p> <p>In addition to this, the site is located immediately to the north of a large multi-period crop mark complex, one of the largest in Essex, which is designated as a scheduled monument.</p>

4.11 Policy S10 Protecting and Enhancing the Environment and Local Amenity

Applications for minerals development shall demonstrate that:

- a) Appropriate consideration has been given to public health and safety, amenity, quality of life of nearby communities, and the natural, built, and historic environment,
- b) Appropriate mitigation measures shall be included in the proposed scheme of development, and
- c) No unacceptable adverse impacts would arise, and,
- d) Opportunities have been taken to improve/ enhance the environment and amenity.

4.11.1 Justification

Mineral development can be an environmentally intrusive activity which can have a significant effect on the environment and the people who live and work in Essex. Mineral working can potentially cause the alteration of topography, landscape and localised hydrology (e.g. the creation or alteration of waterways), noise, dust and traffic impacts, and the loss of both tranquillity and visual amenity. This can result in severance and disruption of landscape, habitat loss, adverse impacts on local host communities including health and amenity impacts as well as impacts on sites of nature conservation, archaeological and cultural heritage value. Also, due to the concentration of mineral resources in certain parts of the county, further working can cause cumulative impacts. Proposals should therefore consider the wider context of possible adverse impacts and the possible cumulative effect with other development within the vicinity of the site. The proposed scheme of mineral development, including processing, transportation and the impact of ancillary structures associated with minerals development, all need to be fully considered and addressed at the earliest stage of the planning process in order to ensure that any adverse impacts are reduced to an acceptable minimum.

4.11.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	+	+	+	+	0	+	+	0	+	0	0	0	0	0	+	+
Medium Term	+	+	+	+	0	+	+	0	+	0	0	0	0	0	+	+
Long Term	+	+	+	+	0	0	0	0	+	0	0	0	0	0	+	+

4.11.3 Significant Effects

There will be positive impacts on biodiversity, water quality, minimising the risk of flooding, agricultural land and landscapes through appropriate consideration to the environment, appropriate mitigation measures where these do occur and opportunities have been taken to improve/enhance the environment. There will be a cumulative and long term strengthening of this policy in conjunction with restoration and after-use proposals in Policy S12.

There will be positive impacts on air quality and minimising greenhouse gas emissions through appropriate consideration to the environment in terms of traffic impacts and associated emissions and appropriate mitigation measures where these do occur.

There will be no additional impacts on the historic environment where although appropriate consideration will be given to the historic environment and appropriate mitigation measures

implemented where these are likely to occur, the MLP is not capable of improving the historic environment.

There will be no additional direct impact on restoration where conditions will not deteriorate in working that may jeopardise or hinder the restoration and/or after-use proposal. There will however be a cumulative and long term positive impact resulting from this policy in conjunction with restoration and after-use proposals in Policy S12.

There will be positive impacts on protecting human health and well-being, as well as minimising nuisance and the impacts on amenity through appropriate consideration to the public health and safety, amenity and quality of life of nearby residents, appropriate mitigation measures where these do occur and opportunities have been taken to improve/enhance the environment.

4.11.4 Temporal Effects

No temporal effects have been identified for this policy other than those associated with the working and post working.

4.11.5 Secondary, Cumulative and Synergistic Effects

There may be a cumulative and long term strengthening of this policy across a number of environmental and social based sustainability criteria in conjunction with restoration and after-use proposals in Policy S12.

There may be an indirect positive impact on road congestion and nuisance where traffic congestion is related to many negative environmental and social impacts and may be subject to improvements or mitigation measures.

There will be no direct impact on the transportation of minerals and congestion; however there may be an indirect positive impact on this objective where traffic congestion is related to many negative environmental and social impacts.

There will be positive long term impacts on climate change adaptation in accumulation with policies S12 and S3.

4.11.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage, numerous issues were looked at regarding the protection of the Essex environment and communities from the adverse impacts of minerals development, including minerals transportation, and ways in which to achieve environmental enhancements through minerals planning. Option 22 looked at the nature of mineral extraction proposals requiring Cumulative Impact Assessment, and options including whether they should be needed for all mineral extraction proposals, only on mineral extraction proposals above a certain size, or only on mineral extraction proposals within certain areas of the County. In addition to this, Option 23 looked at the protection of ground water resources and whether there should be a presumption against the location of mineral extraction, processing or recycling sites within Source Protection Zone 1, to afford protection to groundwater resources. Alternatives were developed based on the responses to these issues that were invited through the consultation period.

Preferred Options Stage:

At this stage the preferred approach was to set out those environmental and health criteria that should be assessed as part of any application without specifying any weighting between different aspects of the environment, including noise, lighting and emissions to air, landscape and countryside, the Highway Network (including PROWs), historic and archaeological resources, the water environment including flooding, agricultural land grades 1, 2 or 3a, nature conservation particularly ecological or wildlife designations, safeguarding around airports and aerodromes, and the cumulative impacts of any of the above. This was deemed reasonable and progressed where the approach provided a basis for encouraging the best mineral schemes to developers and

rejecting unacceptable planning applications; identifying the issues that are most likely to be of concern over and above any relevant national or regional policies and guidance.

An alternative approach was to not set out any relevant policy; where development management and the consideration of applications would be informed by relevant national policy and guidance. This was deemed unreasonable and rejected as it would not give decision makers any guidance on issues of general relevance to Essex, may weaken the ability of Officers to undertake successful negotiations and decision makers to ensure appropriate levels of on-site mitigation, and it provides little reassurance to a potentially affected community that their concerns would be addressed.

Pre-Submission Draft Stage:

At the Pre-Submission Draft stage the policy progressed to specifically set out the criteria to which applications for minerals development should abide, involving health and safety, amenity, quality of life of nearby communities and the natural built and historic environment. The policy is also implicit that applications demonstrate protection, mitigation and enhancement. This is considered a reasonable approach in line with the NPPF and a presumption in favour of sustainable development.

4.11.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP did not appraise Options 21 and 22 under the SEA criteria. The alternative for Option 23 was stated as having positive impacts across a range of sustainability criteria; however an uncertain impact was assessed for flooding. The alternative to have no presumption against sites in SPZ 1, was highlighted as having a negative impact on a range of SEA criteria and uncertain impacts surrounding flooding.

The SA/SEA of the Preferred Approach MLP highlighted strong positive effects on minimising greenhouse gas emissions and increasing adaptability to climate change through the preferred approach, along with numerous other environmental impacts where a number of environmental considerations will be expected at the application stage. However there are uncertainties over the need to ensure a sustainable use of minerals and transportation. The preferred approach was recommended where it gave clarity and provided a local context.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, the policy progressed to a Pre-Submission working draft which was assessed as having positive impacts across a range of sustainability criteria. The policy requires applications to demonstrate the information stated in the policy for both the working and post-working proposals of the site, in line with Policy S12 and the stated contributions to a 200ha minimum priority habitat creation to 2029 within that policy. This was progressed for the final Pre-Submission Draft MLP.

4.11.8 Impacts on Indicators

The implementation of Policy S10 is most likely to impact on the following SA/SEA indicators:

- Where relevant, the condition of the nearest:
 - SSSIs
 - Ancient and/or Species Rich Hedgerows
 - A Green Lane
 - Ancient Woodland
 - Cereal Field margins
 - Heathland
 - Old Orchards
 - Ramsar sites
 - SPAs
 - SACs

- cSACs
- LNR
- NNR
- LoWS
- Ecological status of rivers.
- Chemical status of rivers.
- Condition of water bodies (Water Framework Directive).
- Where relevant, the condition of the nearest (including its setting):
 - World Heritage Site
 - Scheduled Monument
 - Listed Building
 - Conservation Area
 - Historic Park or Garden
 - Historic Battlefield
 - Historic Environment Record
 - Conservation Areas
- Grade 1, 2 and 3 soils
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Residential developments within 100metres of sources of noise and vibration

4.11.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.12 Policy S11 Access and Transport

Proposals for minerals development shall be permitted where it is demonstrated that the development would not have unacceptable impacts on the efficiency and effective operation of the highway network, including safety and capacity, local amenity and the environment.

Proposals for the transportation of minerals by rail and/ or water will be encouraged subject to other policies in this Plan.

Where transportation by road is proposed, this will be permitted where the highway network is suitable for use by Heavy Goods Vehicles or can be improved to accommodate such vehicles. The following hierarchy of preference for transportation by road shall be applied:

(i) Access to a suitable existing junction with the main road network, as defined in Section 7, via a suitable section of an existing road, as short as possible, without causing a detrimental impact upon the safety and efficiency of the network.

(ii) Where (i) above is not feasible, direct access to the main road network involving the construction of a new access/ junction when there is no suitable existing access point or junction,

(iii) Where access to the main road network in accordance with (i) and (ii) above is not feasible, road access via a suitable existing road prior to gaining access onto the main road network will exceptionally be permitted, having regard to the scale of the development, the capacity of the road and an assessment of the impact on road safety.

4.12.1 Justification

The transportation of minerals and associated traffic is one of the most significant impacts relating to mineral workings and is what usually causes most concern to communities. The MPA promotes and supports sustainable transportation methods within and across Essex. Over short distances, the use of conveyors or pipelines can be effective alternatives to lorries. They are most commonly used to transport minerals within sites or from one site to another for processing. The use of private haul routes within sites may be an alternative to use of public roads if circumstances allow for their use.

4.12.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	0	0	++	+	0	0	0	0	0	0	++	+	+
Medium Term	0	0	0	0	0	++	+	0	0	0	0	0	0	++	+	+
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4.12.3 Significant Effects

There will be no impact on biodiversity or water quality where proposals for minerals development shall be permitted where it is demonstrated that the development would not have unacceptable impacts on the environment. It is acknowledged that minerals development is unlikely to enhance biodiversity, which would warrant positive impacts.

There will be positive impacts on sustainable transport, minimising congestion, air quality and minimising greenhouse gas emissions where proposals for the transportation of minerals by rail

and/ or water will be encouraged, reducing comparative road vehicle emissions. In so far as road transportation is covered, the policy seeks to ensure that so far as is possible mineral transportation only occurs on the main road network. This again reduces the possibility of congestion as well as mitigation against the possibility that mineral traffic would have to travel through inhabited localities. This also leads to positive impacts on human well-being and minimising nuisances.

4.12.4 Temporal Effects

No temporal effects have been identified for this policy other than those associated with the working and post working.

4.12.5 Secondary, Cumulative and Synergistic Effects

There will be positive cumulative impacts on safeguarding air quality, minimising transport emissions and sustainable transport objectives in conjunction with Policy S9.

4.12.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage issues surrounding the transportation of minerals were explored under the headings, Sustainable Short Haul Transportation (to achieve the most sustainable transportation of minerals by road over short distances) and Sustainable Long Haul Transportation (to identify and safeguard rail head and wharf facilities which enable the long haul movement of minerals by rail and water) within the plan's core objectives. In addition to this, an option was looked at regarding the promotion of more sustainable transportation of mineral by road (Option 21); specifically the existing route hierarchy and criteria. These were considered the only reasonable approaches in order to deliver sustainable transportation. Elements of these issues were progressed to the preferred approach stage.

Preferred Options Stage:

At the preferred approach stage, transport was deemed a development management issue, and a hierarchy of preference for aggregate transportation from a mineral site was listed as rail or boat in the first instance, followed by road access via a short length of existing road to the main highway network, road access direct to the main highway network and finally road access onto a secondary road before gaining access to the main highway network. This was deemed reasonable and progressed as although the MPA would have liked to maximise the modal share for water borne and rail freight, realistically aggregates will continue to need to be carried by road to serve the County markets. Having a clear policy direction on how this will occur was seen as important to mitigate the adverse impacts by getting lorry traffic onto appropriate routes as quickly as possible. No alternatives were considered reasonable or deliverable by a MPA.

Pre-Submission Draft Stage:

The policy progressed to elaborate on what will be expected of successful applications, in light of a presumption in favour of sustainable development as specified in the NPPF. The policy also aids applicants by defining terminology in the hierarchy of transportation by road. This is deemed a reasonable approach in line with the NPPF.

4.12.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted a positive impact on transport and secondary positive effects relating to reduced transport related emissions. It was stated that Option 21 in regards the promotion of more sustainable transportation of mineral by road to could not be fully appraised.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach is adopted. The promoted transport hierarchy and the preference for mineral sites to be located in

areas close to the main highway network had a strong positive impact on the use of sustainable transport, on air quality and also mitigating against the potential effects of climate change. The policy was further strengthened by the recognition that access should not be directly on to the main highway network in order to improve through flows of traffic.

The progression to a Pre-Submission working draft saw the issue of access and transport become a strategic policy, rather than a development management one. Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, it was assessed that there would be positive impacts on transport and well-being related sustainability objectives. It was recommended that the access implications of potential post-working restoration details of proposals be included within the policy; the transport implications of post-restoration proposals may be more disruptive and have greater impacts on the the highway network than movements to and from the site whilst working. It was acknowledged however, that this issue was more relevant to individual proposals rather than strategic policy, is included within Policy DM1 point 8, and as such this was progressed for the final Pre-Submission Draft MLP.

4.12.8 Impacts on Indicators

The implementation of Policy S11 is most likely to impact on the following SA/SEA indicators:

- Number of developments where a green travel plan is submitted as a condition of development.
- Number of vehicle movements generated by site operation.
- Congestion ratios of relevant routes.
- Tonnage transported by means other than road.
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Location of Strategic Lorry Routes.

4.12.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

4.13 Policy S12 Mineral Site Restoration and After Use

Proposals for minerals development will be permitted provided that it can be demonstrated that the land is capable of being restored at the earliest opportunity to an acceptable environmental condition and beneficial after-uses, with positive benefits to the environment, biodiversity and/or local communities.

Mineral extraction sites shall:

1. Be restored using phased, progressive working and restoration techniques,
2. Provide biodiversity gain following restoration, demonstrating their contribution to priority habitat creation and integration with local ecological networks,
3. Be restored in the following order of preference,
 - (i) At low level with no landfill (including restoration to water bodies),
 - (ii) If (i) above is not feasible then at low level but with no more landfill than is essential and necessary, to achieve satisfactory restoration,
 - (iii) If neither of these are feasible and the site is a Preferred Site as may be determined by the Waste Local Plan, then by means of landfill.
4. Provide a scheme of aftercare and maintenance of the restored land for a period of not less than five years to ensure the land is capable of sustaining an appropriate after-use,
5. Where appropriate, proposals shall demonstrate the best available techniques to ensure that:
 - a) Soil resources are retained, conserved and handled appropriately during operations and restoration,
 - b) In the case of minerals development affecting the best and most versatile agricultural land, the land is capable of being restored back to best and most versatile land,
 - c) Hydrological and hydro-geological conditions are preserved, maintained, and where appropriate, managed to prevent adverse impacts on the adjacent land's groundwater conditions and elsewhere,
 - d) Flood risk is not increased,
 - e) Important geological features are maintained and preserved,
 - f) Adverse effects on the integrity of internationally or nationally important wildlife sites are avoided.

Proposals shall demonstrate that there will not be an unacceptable adverse impact on groundwater conditions, surface water drainage and the capacity of soils for future use. Proposals shall also have regard to any relevant Surface Water or Shoreline Management Plans. Proposals will also demonstrate that the working and restoration scheme is appropriate and the implementation and completion of restoration is feasible.

4.13.1 Justification

Unlike many other forms of development, mineral extraction is a temporary use of land, although on larger sites it may be a long-term activity. Careful restoration of the site to beneficial after-use(s), often in a phased manner, avoids any permanent adverse impacts on the local environment and will provide opportunities for positive enhancement of the local area. Sustainable mineral

development aims to preserve and enhance the land’s long-term potential to support beneficial after-uses into the future through high standards of working and restoration. Achieving timely and high quality restoration and beneficial after-use(s) is integral to the consideration of all proposals for mineral extraction.

4.13.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	+	+	0	0	0	+	0	0	0	0	0	0	0	0
Medium Term	0	0	+	+	0	0	0	+	0	0	0	0	0	0	0	0
Long Term	++	++	+	+	0	0	+	+	+	0	0	0	++	0	+	++

4.13.3 Significant Effects

There will be short to long term positive impacts on minimising the risk of flooding in accordance with the statement that where appropriate, proposals shall demonstrate the best available techniques to ensure that flood risk is not increased. This directly adheres with this objective, acknowledging that conditions are unlikely to even be improved by the majority of development.

There will be positive impacts on encouraging the sustainable use of land and protection of soils. The policy ensures that proposals shall demonstrate the best available techniques to ensure that soil resources are retained, conserved and handled appropriately for site operations and restoration. Similarly, proposals shall demonstrate that where development affects the best and most versatile agricultural land, the land is capable of being restored to at least its former quality if proposed for an agricultural after-use. Despite these positive impacts, there is no guarantee that agricultural land will be restored post minerals workings, however in line with the spatial strategy and direction of minerals development in the County, restoration to alternative after-uses that benefit environmental and social criteria is welcomed and viewed as a sustainable use of land in terms of this objective.

There will be positive impacts on the historic environment where supporting text highlights that there may be some element of heritage conservation, where relevant, involved in after-use. This presumably implies that historic environment will be safeguarded in the working of sites and as a result of minerals development, which will see positive impacts in the short to long term.

4.13.4 Temporal Effects

There will be significant long term impacts on biodiversity as a result of this policy. The Policy seeks to provide biodiversity gain and where possible restoration should contribute towards achieving a possible 200ha of new habitat creation from preferred sites. In addition to this, biodiversity enhancement will be integrated into all development sites.

There will be significant positive impacts on water resources where hydrological and hydro-geological conditions are preserved, maintained, and where appropriate, managed to prevent adverse impacts on the adjacent land’s groundwater conditions and elsewhere. In addition to this, proposals shall demonstrate that there will not be an unacceptable adverse impact on groundwater conditions, surface water drainage and the capacity of soils for future use and will have regard to any relevant Surface Water or Shoreline Management Plans. Proposals shall also demonstrate that the working and restoration scheme is appropriate and the implementation and completion of restoration is feasible which, although there will be no impact, is beneficial in the short and medium term.

There will be positive impacts on climate change adaptation in the long term where supporting text highlights that there may be some element of adaptation to climate change impacts, where relevant, in after-use.

Although landscape implications are not specifically mentioned within the policy, supporting text highlights that some element of landscape enhancement will be sought, where relevant, in after-use. A hierarchical approach to restoration with low level restoration preferred above the use of varying degrees of inert landfill material limits the positive impacts on landscapes, as does a degree of unavoidable uncertainty until sites are determined in the Waste Local Plan.

There will be significant positive impacts on achieving beneficial restoration and aftercare of mineral sites through a detailed policy that seeks to establish significant environmental and social gain through minerals development restoration and after-use. The policy seeks to offset possible disruption from essential minerals development with the long term improvement and enhancement of a number of different habitats and social amenities on a spatial and local level.

There will be long term positive impacts on human health and well being and amenity in those instances where restoration is to amenity or recreational after-use.

4.13.5 Secondary, Cumulative and Synergistic Effects

There will be positive cumulative impacts on a number of environmental and social objectives in conjunction with policies S10 and DM1 in the short-medium term.

There will be positive synergistic impacts on biodiversity, restoration and after-use and amenity in conjunction with Policy S6 regarding the opportunities for after-use and restoration from sand and gravel extraction.

4.13.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage restoration and after-care/use was explored under Option 26 - Achieving wider sustainability objectives through site restoration and after-use, through minerals policy and the consideration of planning applications and to bring improvements to local biodiversity, extend the green infrastructure and improve public access. Alternative approaches were listed as applying the Living Landscape approach to identify opportunities, and use this as the basis from which to determine appropriate restoration and after-use proposals; require clear evidence that restoration and after-use proposals have drawn from landscape and biodiversity survey information, and incorporate positive measures to protect and enhance these areas; require mineral extraction applications include a survey of PROW in the vicinity of the site, and on the basis of local consultation, demonstrate what improvements to this network might be achieved through site restoration and after-use, including the provision of permissive rights of way; and finally, employ additional or other measures. These were all deemed reasonable alternatives where they all seek to incorporate environmental or social benefits from restoration and after-use.

Preferred Options Stage:

At this stage the preferred approach was to provide for multi-functionality in after-use schemes while achieving a minimum 200ha of BAP priority habitat creation comprising new large, terrestrial habitats in Essex, biodiversity enhancement at a site specific level for other / smaller sites, and/or contributions to support the restoration / management of remote sites in proximity to a proposal e.g., LoWS etc. This approach was deemed reasonable and progressed due to many preferred sites being located on versatile soils and this has to be taken into account alongside other sustainability considerations. However, the after-care arrangements for all new sites provide some opportunities for habitat creation and some sites could provide larger inland areas of priority habitats.

Two alternatives were explored. Alternative Approach 1 looked further at a Living Landscape approach with the aim of bringing fragmented landscapes back to life. This was considered a reasonable alternative as it looked to secure significant biodiversity benefits. The approach was

however rejected where it was not specifically supported by national planning policy; links between Living Landscape and the LAA process are likely to change during the course of the MLP, and the correlation between suggested mineral sites and Living Landscape areas being mixed.

Alternative Approach 2 looked at prioritising habitat restoration and enhancement on a case by case basis, with no specific target or direct link with other national or local initiatives. This was considered a reasonable alternative where it addressed restoration on a site-by-site basis where enhancement could restore specific habitats without being stifled by meeting targets. This was however rejected where it was deemed as missing an opportunity for more strategic 'spatial planning' and integration with biodiversity targets, it does not prioritise or distinguish between different habitats and therefore underrepresented habitats may be ignored, and also it would be difficult to monitor the success of the approach and its wider contribution to goals for improving biodiversity.

Pre-Submission Draft Stage:

The Pre-Submission Draft policy on restoration and after-use progresses the preferred approach and offers guidance to applicants in terms of the restoration of proposals for minerals extraction. It also offers a hierarchical approach to restoration in terms of the suitability of different levels of inert landfill. The policy is more descriptive in regards to environmental considerations, and flexible in after-use on a case by case basis, with a strategic aspiration for positive biodiversity and other environmental benefits, and with no specific biodiversity restoration targets that could be seen as restrictive to proposals coming forward and potentially contrary to the NPPF. This is deemed a reasonable approach under the NPPF.

4.13.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted that the Living Landscapes approach for Option 26 would have predominantly positive impacts; however uncertainty surrounds those on flooding and soil. The landscape and biodiversity survey information approach would have similar impacts on wildlife; however, with less focus on climate change it has an uncertain impact. Marginal positive impacts would be realised in terms of public engagement and economic development. The final approach for Option 26, PROW survey and local consultation approach would have uncertainties associated with biodiversity, air quality, climate change and landscapes.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach be adopted through positive benefits on biodiversity, restoration and aftercare and minimising public nuisance and amenity.

Alternative Approach 1 was assessed as less strongly aligned to established national practice and, in addition, not all sites will be suited to forming Living Landscapes and an emphasis on a purely biodiversity focussed restoration would reduce, if not eliminate entirely, any positive economic or local amenity benefit, and as such the positive effect on restoration would be reduced.

Alternative Approach 2 assesses that by not stipulating a target, progress towards a desirable end goal would be either more problematic or unachieved despite the flexibility inherent in the option. In addition, a lack of strategic planning could lead to an imbalance in the type of after-use created, with cumulative effects far more problematic to assess without a clear strategic vision.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, the progression to a Pre-Submission working draft resulted in an assessment of positive impacts across a range of sustainability criteria, where the policy seeks to improve conditions pre-working through restoration, particularly regarding biodiversity and habitat creation. There are also a number of indirect positive impacts associated with this approach. Despite this, it was recommended that point 3.(iii) is reworded as presumably the conditions of this are not viable in a hierarchy below 3.(ii) in terms of what is 'essential' and 'necessary'. It was acknowledged however that a hierarchy of restoration with inert landfill as the least desirable was important to specify in the policy, and the approach provided important links to the inert landfill element of the emerging Waste Local Plan. As such, this policy was progressed for the final Pre-Submission Draft MLP.

4.13.8 Impacts on Indicators

The implementation of Policy S12 is most likely to impact on the following SA/SEA indicators:

- Landscape sensitivity
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction

4.13.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

5 Appraisal of The Minerals Provision Figure

5.1 Introduction

This section sets out the outcome of the appraisal of the plan's identified primary mineral provision over the plan period, together with the reasonable alternatives.

5.2 Sub National Aggregate 'Apportionment'

This Plan has been prepared to provide 4.31mtpa of sand and gravel during the plan-period, to be provided by existing sites with permission and Preferred Sites proposed by the Plan in site-specific terms. The 4.31mtpa provision figure for the County is consistent with the sub-national aggregate apportionment figure and with the policy approaches of the other MPAs in the East of England.

The Essex provision figure of 4.31 mtpa for sand and gravel equates to a total plan provision of 77.58 mtpa over the eighteen year plan-period of 2012-2029 inclusive (excluding existing permissions). After deductions for existing permitted reserves at the base date (37.014 million tonnes at 31 Dec. 2011) (6), and planning permissions for additional sites granted after the base date, the planning requirement for primary extraction from new site allocations on Preferred Sites in Essex is estimated at **40.67 million tonnes**.

Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	/	/	/	/	++	/	/	/	/	0	+	/	0	/	/	/
Medium Term	/	/	/	/	++	/	/	/	/	0	+	/	0	/	/	/
Long Term	+	/	/	/	0	0	/	/	-	0	0	0	+	0	+	+

Significant Effects

There will be uncertain impacts on biodiversity, water quality and resources, flooding, air quality, the historic environment and landscapes from the tonnage specified for primary extraction. There is the potential for negative impacts through the identification of sites to meet the identified provision; however these would be realised on a site by site basis, and cumulatively over a network of Preferred Sites. A robust site selection methodology and the process of validating applications will seek to minimise impacts. There will also be uncertain impacts on green house gas emissions and climate change, health and well-being and nuisance and amenity dependant on individual site proposals.

The impacts on soils will similarly be dependant on the identified Preferred Sites for extraction and the site selection methodology. As far as the proposed tonnage reflects a sustainable use of land, there are also likely to be uncertain impacts where the identification of preferred sites can be seen to equally ensure that reserves are available in a best case future economic scenario, but also potentially identify a higher allocation than may be required locally in a worst case future economic scenario.

There will be uncertain impacts on transport where although provision and the identification of Preferred Sites is likely to decrease mineral miles to support new development, there is still uncertainty as to how much of the tonnage specified will be required in the plan area, and whether this is conducive to sustainable transportation.

It has been assessed that there will be a significantly positive impact on the minerals supply hierarchy where the plan provision figure seeks to enable a supply of mineral products to meet the

needs of the local economy and also safeguards key mineral resources for local / national infrastructure projects.

There will be a positive impact on economic development where the planned mineral provision seeks to respond to economic growth over the plan period. Uncertain impacts may be realised for sustainable mineral use however, where it could be perceived that mineral provision would be at a level that may not be conducive to maximising the recycling of aggregates.

Temporal Effects

Post minerals working, there will be a positive impact associated with restoration and after-use and in light of this, also biodiversity, amenity and health.

A negative long term impact will be realised for landscapes however, where sites would require quantities of inert waste that surpass those in the plan area for restoration to anything other than low level.

There will be uncertain long term impacts on water quality / resources, flooding, soils and the historic environment where impacts are dependant on site specifics. It is possible that these environmental factors could be negatively impacted upon by the specified mineral provision in the plan area, without effective mitigation and a robust site selection methodology.

Uncertain impacts in the long term have been assessed regarding climate change adaptation where impacts are dependant on specific site proposals and conditions.

There will be no impact on minerals supply, air quality, economic development, sustainable mineral use and transportation where these criteria are only relevant to the period of minerals working in this instance.

Secondary, Cumulative and Synergistic Effects

It is possible that there will be negative impacts in the short-medium term on landscapes and biodiversity with the extraction of minerals from the number of sites required, where issues of character and networks of habitats can be seen to accumulate. It is important that negative impacts are mitigated on a site by site basis, and that as specified by legislation, Environmental Impact Assessments accompany applications for mineral development.

Proposed Mitigation Measures / Recommendations

A robust site selection methodology and the process of validating applications will seek to minimise negative impacts. It is important however that these are suitably non-restrictive and result in the best possible sites coming forward. In addition it is important that negative impacts are mitigated on a site by site basis, and that as specified by legislation, Environmental Impact Assessments accompany applications for mineral development.

Progress through the SA/SEA Process

At the Further Issues and Options stage (2009), it was estimated that an extra **39.025mt** would need to be identified for the 20 year plan period (2007 - 2026 inclusive), taking into account existing permitted reserves and subsequent permissions and committee resolutions to grant planning permission since 31st December 2006. This was not subject to appraisal in the SA/SEA as it reflected the national / regional approach and apportionment figures at the time, and was appraised as such at that level.

At the Preferred Approach stage (2010) it was stated that since the Further Issues and Options paper, the national and regional guidelines for aggregates provision in England 2005-2020 had reduced the amounts that the East of England had to plan for. The Regional Aggregates Working Party agreed to base the revised figures for individual authorities on their proportionate sales contribution over the last 10 years. The revised apportionment figure for Greater Essex was 4.31mtpa. Essex County Council agreed with Thurrock Borough Council on the appropriate split between our two authorities, and estimated that an extra **42.225mt** will need to be identified for the 20 year plan period (2009 - 2028 inclusive). This took into account existing permitted reserves and subsequent permissions and committee resolutions to grant planning permission since 31st

December 2008. The increased amount that needed to be planned for compared to the 39.025mt identified in the Further Issues and Options reflected a fall in reserves due to a reassessment of two sites and the longer Plan period to 2028. This was not subject to appraisal in the SA/SEA as it reflected the national and regional approach and apportionment figures at the time.

The 'SEA of Revocation of East of England Regional Strategy' (July, 2012), appraises the retention and revocation of RS Policy M1: Land Won Aggregates and Rock. This policy takes the National and Regional Guidelines of Aggregate Minerals in England 2001-2016 and apports requirements for a specific amount of aggregate minerals to each MPA, taking into account the advice of the Aggregates Working Party. The alternative of 'Revocation' requires aggregate minerals to be determined by average sales as specified in paragraph 145 of the NPPF. The 'SEA of Revocation of East of England Regional Strategy' (July, 2012) states that, 'The effects of revocation of this policy are likely to be no different than that for retention as there will still be a need for each authority to plan for aggregate extraction.'

Reasons for Selection

In preparing to provide 4.31mtpa of sand and gravel during the plan-period, the MLP is planning for future housing growth in Essex, alongside the planned major infrastructure schemes of the Lower Thames Crossing, Crossrail, Bradwell Nuclear Power Station, port facilities in the London Gateway, and a container terminal at Bathside Bay in Harwich. In addition to this, approximately 0.6mtpa is exported to other parts of the country.

It is stated in the MLP that the numerical difference between the sub-regional apportionment figure and the sales figures provides for flexibility in the Plan. If future sales do not approach the sub-regional apportionment figure then plan-provision made now can be rolled-forward in a local plan review to cover the period extending beyond 2029. Conversely, if the sales figures 'bounce back' to higher volumes closer to recent pre-recessionary experience, then the Plan will be able to deal with this outcome effectively and provide certainty to local communities and the minerals industry about where mineral development will take place.

Impacts on Indicators

The implementation of Policy S6 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

5.3 Alternative Considered

NPPF Aggregate Supply Provision – Land Won Sand and Gravel Sales (10 year rolling average)

The NPPF states that the amount of mineral to be provided annually is to be based on a rolling ten year local sales average whilst taking other local information into account. A ten year rolling average of sales is considered to be a valid approach for locally assessing an apportionment figure by the NPPF for two main reasons. Firstly, the time period is short enough so that overly historic sales are not taken into account. Historic sales are broadly more likely to be higher than more recent sales due to improvements in construction technologies and a stronger focus on re-using recycled and secondary material. The period is also considered long enough to ensure that short-term fluctuations in sales do not mask a true evaluation of what is considered to be a suitable amount of mineral to provide for.

The NPPF states that minerals planning authorities should plan for a steady and adequate supply of aggregates by preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities. The planned provision of minerals should be calculated by taking a rolling average of the previous ten year sales as a starting point.

As specified in the Essex Local Aggregate Assessment (2012), Site Operator Survey Returns and Estimates (2011) identify that the average annual sales for the years 2002-2011 is **3.76 million tonnes per annum** for Greater Essex (Essex, Southend-on-Sea and Thurrock).

Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	/	/	/	/	++	/	/	/	/	0	+	+	0	/	/	/
Medium Term	/	/	/	/	+	/	/	/	/	0	/	+	0	/	/	/
Long Term	+	/	/	/	0	0	/	/	-	0	0	/	+	0	+	+

Significant Effects

There will be uncertain impacts on biodiversity, water quality and resources, flooding, air quality, the historic environment and landscapes from this approach to primary extraction. There will also be uncertain impacts on green house gas emissions and climate change, health and well-being and nuisance and amenity dependant on individual site proposals.

The impacts on soils will similarly be dependant on identified sites for extraction and the site selection methodology. As far as the proposed tonnage reflects a sustainable use of land, there are also likely to be uncertain impacts where reserves may not be adequately identified at the plan-making / site selection stage should demand increase over the plan period; leading to uncertainty in the industry.

There will be uncertain impacts on transport where the provision set by the 10 year rolling average of sales may or may not respond well to locations of growth in the plan area at the identified level of provision.

It has been assessed that there will be a significantly positive impact on the minerals supply hierarchy where the plan provision figure seeks to enable an adequate supply of mineral products to meet the needs of the local economy at present. Impacts are limited in the medium term however, in line with provision responding more directly to the trend of sales over the past 10 years that may not be sustained for the length of the plan.

There will be a positive impact on economic development in the short term where minerals supply will reflect demand under sales based provision. In the medium term however there will be an uncertain impact on economic development where the management and planning of mineral provision may not respond to potential increased economic growth over the plan period. Positive impacts may be realised for sustainable mineral use however, where primary mineral provision could be at a level conducive to requiring an increase in the recycling of aggregates.

Temporal Effects

Post minerals working, there will be a positive impact associated with restoration and after-use and in light of this, also biodiversity, amenity and health.

A negative long term impact will be realised for landscapes however, where sites would require quantities of inert waste that surpass those in the plan area for restoration to anything other than low level.

There will be uncertain long term impacts on water quality / resources, flooding, soils and the historic environment where impacts are dependant on site specifics. It is possible that these environmental factors could be negatively impacted upon by the specified mineral provision in the plan area, without effective mitigation and a robust site selection methodology.

There will be uncertain impacts on sustainable mineral use in the long term at this stage. It is possible that provision based on sales could see an increase in permanent strategic aggregate recycling facilities being required in the plan area should there be an economic upturn over the plan period.

Uncertain impacts in the long term have also been assessed regarding climate change adaptation where impacts are dependant on specific site proposals and conditions.

There will be no impact on minerals supply, air quality, economic development and transportation where these criteria are only relevant to the period of minerals working in this instance.

Secondary, Cumulative and Synergistic Effects

There will be no significant secondary, cumulative or synergistic effects as a result of this option. It is possible that there will be negative impacts in the short-medium term on landscapes and biodiversity with the extraction of minerals from the number of sites required, where issues of character and networks of habitats can be seen to accumulate; however these are not as likely as through the sub-national aggregate apportionment figure. It is important however that negative impacts are mitigated on a site by site basis, and that as specified by legislation, Environmental Impact Assessments accompany applications for mineral development.

Impacts on Indicators

The implementation of Policy S6 is most likely to impact on the following SA/SEA indicators:

- Tonnage recycled.
- Tonnage landfilled.
- Number of permissions with an associated site restoration plan.
- State of the site prior and post extraction
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

Proposed Mitigation Measures / Recommendations

A robust site selection methodology and the process of validating applications will seek to minimise impacts. It is important however that these are suitably non-restrictive and result in the best possible sites coming forward. In addition it is important that negative impacts are mitigated on a site by site basis, and that as specified by legislation, Environmental Impact Assessments accompany applications for mineral development.

Reasons for Non-Selection

Recent sales figures in the plan area are below the sub-national apportionment figure. This is in reflection of a recessionary period in the national economy and is untypical in the context of historic performance in recent decades.

The NPPF and the Guidance on MASS document allows an MPA to take other relevant local factors into account when determining their minerals provision over the lifetime of their Minerals Local Plan and as such are not bound to accept the ten year average of rolling sales if evidence should point to the contrary.

6 Preferred Minerals Sites for Primary Mineral Extraction

6.1 Introduction

The MLP sets out the plan requirements of the Provision of Primary Minerals for the County for the 18 year period covering 1st January 2012 to 31st December 2029. The provision made ensures an adequate and steady supply of minerals for land won sand and gravel and silica sand. In addition to this, landbanks are also required for industrial minerals in line with paragraph 146 of the NPPF.

The appraisal of Policies P1 and P2 in this Environmental Report correspond to the appraisals of the individual preferred sites as listed in Table 5 (sand and gravel) and Table 6 (industrial minerals) of the MLP. Appraisals of the minerals sites for primary mineral extraction have followed the methodology as detailed in Annex E: Site Appraisals, which accompanies this report.

The methodology of site appraisals in the SA/SEA is independent from that of the MLP's site assessment and selection methodology. Despite this, some of the information and evidence base gathered for the MLP site assessment and selection methodology has been used to inform that of the SA/SEA site appraisals.

In progressing from the Preferred Approach stage to the Pre-Submission Draft stage, the Minerals and Waste Planning team revised their site assessment and selection methodology in light of:

- Assessing sites for their acceptability for low-level restoration, based on evidence in the emerging Waste Local Plan's Capacity Gap Report regarding tonnages of suitable inert materials.
- Preferred Approach MLP consultation responses regarding sites having to be accepted in the south and west of the County that perform less well, on environmental grounds, than sites located elsewhere in the County that haven't been selected.
- A need to clearly establish environmental acceptability on an even footing across all sites with those assessed as being unacceptable ruled out.
- Limiting more minor cumulative adverse environmental impacts where it can be demonstrated that impacts could be satisfactorily avoided, mitigated or compensated for.

As a result of this change in methodology, all previously preferred and non-preferred sites in the Preferred Approach MLP have been re-assessed for the Pre-Submission Draft MLP by the Minerals and Waste Planning team. As a result of this, the SA/SEA has also undertaken a process to re-appraise all relevant sites in those instances where the MLP site assessment and selection methodology has been used to inform that of the SA/SEA site appraisals.

The rest of this chapter details the appraisal of the preferred sites for primary sand and gravel extraction and industrial minerals of the Pre-Submission Draft MLP. In addition to this, the changes made from the Preferred Approach MLP site appraisals are highlighted, as well as those from the appraisal of the non-preferred alternative sites.

6.2 Policy P1 Preferred Sites for Primary Sand and Gravel Extraction

In the case of Preferred Sites for sand and gravel extraction, the principle of extraction has been accepted and the need for the release of mineral proven.

The Mineral Planning Authority will grant planning permission for sand and gravel workings within the Preferred Sites, listed in Table 5 (Preferred Sites for land won Sand and Gravel Provision) and as shown on the Policies Map, subject to the proposal meeting the detailed development requirements set out in Appendix 5, other relevant policies of the Development Plan for Essex and any other material considerations.

6.2.1 Justification

The NPPF highlights that MPAs should include policies for the extraction of mineral resources of local and national importance in their area in Local Plans. In addition to this, MPAs should plan for a steady and adequate supply of aggregates by making provision for the land-won and other elements of their Local Aggregate Assessment in their mineral plans in the form of specific sites, preferred areas and/or areas of search, and locational criteria as appropriate.

6.2.2 North-Eastern Area Sites

As stated in The Strategy, the majority of the sites will be located in the central and north-eastern parts of the County to support key areas of growth and development and reduce mineral miles. The following sites are preferred sites for sand and gravel in the north-eastern area of the County.

- A3 Bradwell Quarry, Rivenhall Airfield
- A4 Bradwell Quarry, Rivenhall Airfield
- A5 Bradwell Quarry, Rivenhall Airfield
- A6 Bradwell Quarry, Rivenhall Airfield
- A7 Bradwell Quarry, Rivenhall Airfield
- A13 Colchester Quarry – Five Ways Fruit Farm, Stanway
- A20 Sunnymead, Alresford
- A31 Maldon Road, Birch
- B1 Martells Quarry Slough Farm, Ardleigh Area 1

6.2.3 Impact on SA/SEA Objectives of North-Eastern Sites

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A3	SM	1	1	1	-2	0	/	/	-1	1	0	/	0	1	1	/	/
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	0

Significant Effects: Site A3 will have positive impacts associated with biodiversity, water resources, flood risk, landscape, restoration and transportation. There will be a negative impact associated with the historic environment, although mitigation is possible. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have a positive impact associated with restoration and after-use, biodiversity, and a less negative impact on agricultural soil.

Progress through the SA/SEA Process

Site A3 was appraised at the Preferred Approach MLP stage as containing a small amount of grade 1 or 2 agricultural land. It has been verified that the site only contains grade 2 agricultural land; however this has not changed any of the impacts from the Pre-Submission Draft assessment of the site. The long term impacts on biodiversity have become positive from previously uncertain in response to after-use requirements.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A4	SM	1	1	1	-2	0	/	/	-1	1	0	/	0	1	1	/	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	0

Significant Effects: Site A4 will have positive impacts associated with biodiversity, water resources, flood risk, landscape, restoration and transportation. There will be a negative impact associated with the historic environment although mitigation is possible, and also on nuisance associated with nearby properties. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have a positive impact associated with restoration and after-use, biodiversity, and a less negative impact on agricultural soil.

Progress through the SA/SEA Process

Site A4 was appraised at the Preferred Approach MLP stage. The long term impacts on biodiversity have become positive from previously uncertain in response to after-use requirements.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A5	SM	1	1	1	-2	0	/	/	-1	1	0	/	0	1	1	/	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A5 will have positive impacts associated with biodiversity, water resources, flood risk, landscape, restoration and transportation. There will be a negative impact associated with the historic environment although mitigation is possible, and also on nuisance associated with nearby properties. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have a positive impact associated with restoration and after-use, biodiversity and amenity through the site’s after-use proposals. A less negative impact on agricultural soil has been awarded in the long term associated with a return to agriculture as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A5 was appraised at the Preferred Approach MLP stage. The long term impacts on biodiversity have become positive from previously uncertain in response to after-use requirements.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A6	SM	1	1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	0	/	-1	0	/	/	-1	/	0	/	0	1	0	/	0

Significant Effects: Site A6 will have positive impacts associated with biodiversity, water resources, flood risk, restoration and transportation. There will be negative impacts associated with the historic environment and landscape although in both instances mitigation is possible, and on health and well-being and nuisance associated with nearby properties. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have a positive impact associated with restoration and after-use, and a positive impact on biodiversity through part of the site's after-use proposal. A less negative impact on agricultural soil has been awarded in the long term associated with a return to agriculture as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A6 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, a long term negative impact has been given for the effect on the historic environment, where it is assessed that there is incompatibility between the low level restoration proposal and the need for localised infilling to protect the setting of listed buildings. The long term impacts on biodiversity have become positive from previously uncertain in response to after-use requirements. Long term impacts on amenity change from positive to 'no impact' to reflect the revised after-use requirements.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A7	SM	1	1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A7 will have positive impacts associated with biodiversity, water resources, flood risk, restoration and transportation. There will be negative impacts associated with the historic environment and landscape although in both instances mitigation is possible, and on health and well-being and nuisance associated with nearby properties. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have a positive impact associated with restoration and after-use, biodiversity and amenity through the site's after-use proposal. A less negative

impact on agricultural soil has been awarded in the long term associated with a return to agriculture as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A7 was appraised at the Preferred Approach MLP stage. The long term impacts on biodiversity have become positive from previously uncertain in response to after-use requirements.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A13	SM	1	1	1	-2	0	/	/	-1	1	0	/	0	1	1	-1	-1
	L	1	0	/	-2	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A13 will have positive impacts associated with biodiversity, water resources, flood risk, landscape, restoration and transportation. There will be negative impacts associated with the historic environment although mitigation is possible, and on health and well-being and nuisance associated with nearby properties. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity and amenity due to after-use to green infrastructure and amenity in line with Colchester District Council’s LDF. This will however have negative impacts in the long term associated with grade 2 soils.

Progress through the SA/SEA Process

Site A13 was appraised at the Preferred Approach MLP stage as containing a small amount of grade 1 or 2 agricultural land. It has been verified that the site only contains grade 2 agricultural land; however this has not changed any of the impacts from the Pre-Submission Draft assessment of the site. The appraisal at the previous stage was based on restoration to agriculture, which has now been amended to green infrastructure and amenity. As such long term scores have changed from negative to significant negative in regard to soils, from ‘uncertain’ to positive for biodiversity, and also ‘uncertain’ to positive for amenity.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A20	SM	-1	-1	1	-1	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	1	/	-1	0	/	/	/	/	0	/	0	1	0	/	/

Significant Effects: Site A20 will have positive impacts associated with flood risk, restoration and transportation. There will be negative impacts associated with biodiversity, water resources, agricultural land, the historic environment, landscapes, health and well-being and nuisance associated with nearby properties, although it is acknowledged that many of these impacts can be mitigated.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity and water resources through the stated restoration proposal. There will be a negative impact on agricultural soil associated with restoration as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A20 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, the short-medium term impact on agricultural land has been given a negative score from a previously significant negative score at the Preferred Approach MLP stage. This is due to an agricultural land classification report submitted by site promoter that verifies that none of the site would affect grade 1 or 2 land as previously assessed. In addition to this, the long term impact on amenity has been changed from 'no impact' to 'uncertain' where there are uncertain issues regarding potential ponding after extraction ceases and the reinstatement of a footpath.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A31	SM	1	-1	-1	-1	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	1	/	0	0	/	/	-1	/	0	/	0	1	0	/	1

Significant Effects: Site A31 will have positive impacts associated with biodiversity, restoration and transportation. There will be negative impacts associated with water resources, flood risk, agricultural land, the historic environment, landscape, health and well-being and nuisance associated with nearby properties, although it is acknowledged that many of these impacts can be mitigated.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity, water resources and amenity through the stated restoration proposals. There will be a negative impact on the historic environment.

Progress through the SA/SEA Process

Site A31 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, the long term impact on the historic environment has been given a negative score from a previously uncertain score at the Preferred Approach MLP stage. This is due to the particular sensitivity with regard to infill and boundary treatments. The score for biodiversity has changed from 'uncertain' to positive in line with after-use proposals.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B1	SM	1	1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	/	0	/	-1	0	/	/	/	0	0	/	0	1	0	/	/

Significant Effects: The sand and gravel element of site B1 will have positive impacts associated with biodiversity, water resources, flood risk, restoration and transportation. There will be negative impacts associated with the historic environment, landscape, health and well-being and nuisance

associated with nearby properties, although it is acknowledged that many of these impacts can be mitigated. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use. There will be a less negative impact on agricultural soil associated with restoration as specified in the sustainability framework.

Progress through the SA/SEA Process

Site B1 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, there will be no long term impact on transport where previously an uncertain score was given at the Preferred Approach MLP stage. This is due to a re-assessment of the methodology used in the transport and safety assessments undertaken for the Mineral and Waste Planning team's site selection methodology, from which the SA/SEA draws transport information.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

6.2.4 Secondary, Cumulative and Synergistic Effects of North Eastern Area Sites

The north-eastern preferred sites will have no secondary or synergistic impacts through their selection. There will be positive cumulative impacts associated with minerals supply, and a desire to minimise the transportation of minerals.

6.2.5 Alternatives Considered for North-eastern Area Sites and the Reasons for their Rejection / Selection

In response to a series of 'call-for-sites' requests for sand and gravel extraction, starting in 2005, numerous sites came forward from site promoters. It must be considered that all sites coming forward from this process be considered reasonable alternatives, prior to assessment. All of these sites for which there is a required landbank were fully appraised at the Preferred Approach stage MLP and have been fully re-appraised for the Pre-Submission Draft stage MLP in the same manner and to the same level of detail as the preferred sites. For the detailed appraisals of these sites at both the Preferred Approach and Pre-Submission Draft stages, please see Annex E: Site Appraisals accompanying this report. The alternatives are detailed in the following table, along with a summary of the reasons for their non-selection.

Table 6: Alternative 'Non-Preferred' Sites for Primary Sand and Gravel Extraction in the North-Eastern Area of the County

Site	Reasons for Non-Selection
A1 Appleford and Colemans Farm, Little Braxted Lane, Witham	Unacceptable adverse impact on international or national historic environment designation.
A2 Bradwell Quarry, Rivenhall Airfield	Planning permission (ESS/32/11/BTE) for sand and gravel extraction was granted in February 2012 for the majority of site A2.
A8 Bradwell Quarry, Rivenhall Airfield	Issues with timeframes and the site not being contiguous with current workings.
A10 Covenbrook Hall Farm, Stisted	The site's proximity to the Haven gateway, Chelmsford and West Essex is outweighed by the concentration of sites within this stretch of the A120 between Braintree and Colchester.

	In addition to this, the Highways Agency needs demonstration that the A120 trunk road can continue to operate safely and efficiently.
A11 Tile Kiln, Valley Farm, Sible Hedingham	Significant negative impact on landscape that is not capable of mitigation
A12 Colchester Quarry - Bellhouse Farm South, Stanway	Significant negative impact on landscape that is not capable of mitigation
A14 Fingringhoe Quarry, Ballast Quay, Fingringhoe	Significant negative impact on landscape assessed in the Pre-Submission re-appraisal that is not capable of mitigation. There is also likely to be a high adverse visual impact for a number of receptors.
A15 Admirals Farm, Great Bentley	There is a concentration of sites within the Haven Gateway and other sites are closer to Colchester, a centre for growth. In addition to this, 20% of the site is within 250m of the Great Bentley defined settlement boundary, including a Conservation Area, which would not be suitable for low level restoration.
A16 Church Farm, Alresford	Site would require the continued use of Keelers Lane which is approximately 5.2 metres wide. This is insufficient width to accommodate a regular two way flow of HGV traffic and there is evidence of verge/carrageway edge damage and erosion evident on site.
A17 Frating Hall Farm, Frating	There is a concentration of sites within the Haven Gateway and other sites are closer to Colchester, a centre for growth. In addition to this, infilling would be needed to protect a Listed Building, meaning the site is not suitable for low level restoration.
A18 Gurnhams, Little Bentley	There is a concentration of sites within the Haven Gateway and other sites are closer to Colchester, a centre for growth. In addition to this, infilling would be needed to protect a Listed Building, meaning the site is not suitable for low level restoration.
A19 Lodge Farm, Alresford	Significant negative impact on landscape that is not capable of mitigation. In addition to this the site would be contrary to transport policy.
A21 Thorrington Hall Farm, Thorrington	There would also be an unacceptable adverse impact on international or national historic environment designation. There is also likely to be a high adverse to major adverse visual impact for a large number of receptors.
A28 Fingringhoe Quarry – North, Colchester	Infilling would be needed to protect village setting which is not compatible with low level restoration.
A29 Fingringhoe Quarry – West, Colchester	Significant negative impact on landscape that is not capable of mitigation
A30 Fingringhoe Quarry – South, Colchester	Significant negative impact on landscape that is

	not capable of mitigation
A34 Thorrington Hall Farm	There is a concentration of sites within the Haven Gateway and other sites are closer to Colchester, a centre for growth. In addition to this, 10% of the site is within 250m of the Thorrington defined settlement boundary.
A42 Ardleigh Rail, Ardleigh	The site is contrary to transport policy, and concerns surrounding the access arrangements on Slough Lane. There would also be an unacceptable adverse impact on a Scheduled Monument designation. In addition to this there would be a highly adverse visual impact upon many receptors.
A43 Parkgate Farm, Silver End	The operators of Bradwell Quarry are not willing for the site to be an extension at this time. In addition, there is no agreement for the Promoter of the site to utilise the access of the existing Bradwell Quarry to the A12. The site would also have a highly adverse visual impact upon many receptors, and a number of properties are within 100m of the indicative extraction area.
A45 Ardleigh Rail 2	The site is contrary to transport policy, and concerns surrounding the access arrangements on Slough Lane. There would also be a highly adverse visual impact upon many receptors.

6.2.6 Central Area Sites

As stated in The Strategy, the majority of the sites will be located in the central and north-eastern parts of the County to support key areas of growth and development and reduce mineral miles. The following sites are preferred sites for sand and gravel in the central area of the County.

- A9 Broadfield Farm, Rayne
- A22 Little Bullocks Farm, Little Canfield
- A23 Little Bullocks Farm, Little Canfield
- A38 Blackleys Quarry, Great Leighs
- A39 Blackleys Quarry, Great Leighs
- A46 Land at Colemans Farm
- A40 Land at Shellows Cross Farm

6.2.7 Impact on SA/SEA Objectives of Central Area Sites

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A9	SM	1	-1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A9 will have positive impacts associated with biodiversity, flood risk, restoration and transportation. There will be negative impacts associated with water resources, the historic environment, landscape, health and well-being and nuisance associated with nearby properties, although it is acknowledged that many of these impacts can be mitigated. A significant

negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity and amenity due to the restoration proposals for the site. There will be a less negative impact on agricultural soil associated with restoration as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A9 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, there will be a positive short-medium term impact on transport where previously a negative score was given at the Preferred Approach MLP stage. This is due to a re-assessment of the methodology used in the transport and safety assessments undertaken for the Mineral and Waste Planning team's site selection methodology (from which the SA/SEA draws transport information) which now states that the site accords with emerging minerals transport policy and no major issues are identified.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A22	SM	1	-1	-1	-2	0	/	/	1	-1	0	/	0	1	1	/	/
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A22 will have positive impacts associated with biodiversity, the historic environment, restoration and transportation. There will be negative impacts associated with water resources, flood risk and landscape; although it is acknowledged that many of these impacts can be mitigated. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity and amenity due to the restoration proposals for the site. There will be a less negative impact on agricultural soil associated with restoration as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A22 was appraised at the Preferred Approach MLP stage. There has been no change in any of the impacts from the Pre-Submission Draft assessment of the site.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A23	SM	1	1	1	-2	0	/	/	1	-1	0	/	0	1	1	-1	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	1

Significant Effects: Site A23 will have positive impacts associated with biodiversity, water resources, flood risk, the historic environment, restoration and transportation. There will be

negative impacts associated with landscape, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use, biodiversity and amenity due to the restoration proposals for the site. There will be a less negative impact on agricultural soil associated with restoration as specified in the sustainability framework.

Progress through the SA/SEA Process

Site A23 was appraised at the Preferred Approach MLP stage. There has been no change in any of the impacts from the Pre-Submission Draft assessment of the site.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A38	SM	1	1	1	-1	0	/	/	-1	1	0	/	0	1	1	-1	-1
	L	/	0	/	1	0	/	/	/	/	0	/	0	1	0	/	0

Significant Effects: Site A38 will have positive impacts associated with biodiversity, flood risk, landscape, restoration and transportation. There will be negative impacts associated with water resources, agricultural land, the historic environment, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use and soils/agricultural land.

Progress through the SA/SEA Process

Site A38 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, the short-medium term impact on agricultural land has been given a negative score from a previously significant negative score at the Preferred Approach MLP stage. This is due to a review of agricultural land classifications which showed that the site mainly lies within Grade 3 land. In addition to this the long term impact on agricultural land has changed from negative to positive in regards to a return to agriculture.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team’s site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A39	SM	1	1	1	-1	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	/	0	/	/	0	/	/	-1	/	0	/	0	1	0	/	0

Significant Effects: Site A39 will have positive impacts associated with biodiversity, water resources, flood risk, restoration and transportation. There will be negative impacts associated with agricultural land, the historic environment, landscape, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use.

Progress through the SA/SEA Process

Site A39 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, the short-medium term impact on agricultural land has been given a negative score from a previously significant negative score at the Preferred Approach MLP stage. This is due to a review of agricultural land classifications which showed that the site mainly lies within Grade 3 land. The long term impacts have changed from negative to uncertain regarding agricultural land to reflect restoration to agriculture that has difficulties surrounding a listed building. In addition to this, the short-medium term impact on the historic environment has been revised from a positive score in the Preferred Approach MLP appraisal to a negative score in the Pre-Submission Draft appraisal. This is due to the site being in proximity to a grade II listed Gatehouse Farmhouse. In the long term the impacts on this objective have also changed from 'uncertain' to positive to reflect a potential negative impact on historic asset from low lever restoration. These impacts were identified in a re-assessment of the methodology used in the historic environment assessments undertaken for the Mineral and Waste Planning team's site selection methodology (from which the SA/SEA draws historic environment information).

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A46	SM	/	-1	-1	-2	0	/	/	-1	-1	0	/	0	1	-1	-1	-1
	L	1	1	/	-2	0	0	/	/	-1	0	/	0	1	0	1	1

Significant Effects: Site A46 will have a positive impact associated with restoration. There will be negative impacts associated with water resources, flood risk, the historic environment, landscape, transportation, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with biodiversity, water resources, restoration and after-use, health and well-being and amenity. A negative impact will be realised on landscape. There will be a significant negative impact on agricultural soil associated with the restoration proposal not returning to agriculture; however it could be considered that this is partially negated by restoration to biodiversity and amenity.

Progress through the SA/SEA Process

Site A46 was appraised at the Preferred Approach MLP stage. For the Pre-Submission Draft appraisal of the site, the long term impact on biodiversity has been given a positive score from a previously uncertain score at the Preferred Approach MLP stage. This is due to the re-assessed ECC Ecology Assessment that informs both the Mineral and Waste Planning team's site selection methodology and the SA/SEA assessment stating that impacts on habitats are likely to be minor. In addition to this, previous uncertain short-medium and long term impacts on landscape have been re-assessed to negative. The re-assessed ECC Landscape Assessment states that "taking account of the whole site, particularly the south area, there is likely to be a high landscape impact" which could be reduced in the long term but will be apparent on the landscape close to the river. This has changed the impacts highlighted in both the Mineral and Waste Planning team's site selection methodology and the SA/SEA assessment.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A40	SM	1	-1	1	-1	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	1	0	/	-1	0	/	/	/	/	0	/	0	1	0	/	0

Significant Effects: Site A40 will have positive impacts associated with biodiversity, flood risk, restoration and transportation. There will be negative impacts associated with water resources, agricultural land, the historic environment, landscape, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated.

Temporal Effects: Post-working of the site will have positive impacts associated with biodiversity, restoration and after-use and amenity. A negative impact will be realised on agricultural land as per the restoration proposals.

Progress through the SA/SEA Process

Site A40 was appraised at the Preferred Approach MLP stage. At that stage a positive score was given in regards to amenity, however the restoration proposals now state restoration to nature conservation and agriculture.

Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

6.2.8 Secondary, Cumulative and Synergistic Effects of Central Area Sites

The central area preferred sites will have no secondary or synergistic impacts through their selection. There will be positive cumulative impacts associated with promoting the minerals supply hierarchy, creating a network of habitats in restoration schemes and also providing amenity in after-use.

6.2.9 Alternatives Considered for Central Area Sites and the Reasons for their Rejection / Selection

In response to a series of 'call-for-sites' requests for sand and gravel extraction, starting in 2005, numerous sites came forward from site promoters. It must be considered that all sites coming forward from this process be considered reasonable alternatives, prior to assessment. All of these sites for which there is a required landbank were fully appraised at the Preferred Approach stage MLP and have been fully re-appraised for the Pre-Submission Draft stage MLP in the same manner and to the same level of detail as the preferred sites. For the detailed appraisals of these sites at both the Preferred Approach and Pre-Submission stages, please see Annex E: Site Appraisals accompanying this report. The alternatives are detailed in the following table, along with a summary of the reasons for their non-selection.

Table 7: Alternative 'Non-Preferred' Sites for Primary Sand and Gravel Extraction in the Central Area of the County

Site	Reasons for Non-Selection
A24 Easton Park, Great Dunmow	Site has since gained planning permission and

	is no longer part of the site allocation process.
A35 Tyndales Farm, Danbury	A large amount of properties lie within 250m of the site and it is not considered that this visual impact could be satisfactorily mitigated in keeping with the landscape quality.
A36 Olivers Nurseries, Witham	Significant negative impact in that the site is unable to achieve satisfactory highway access.
A37 Alsteads Farm, Little Waltham	Significant negative impact on landscape that is not capable of mitigation.
A44 Whitehouse Farm, Woodham Walter	Significant negative impact on landscape that is not capable of mitigation.

6.2.10 Additional Alternatives for Primary Sand and Gravel Extraction Sites and the Reasons for their Rejection / Selection

In response to a 'call-for-sites' for sand and gravel extraction in 2005, numerous sites came forward from site promoters in the County outside those areas that could be defined as central or north-eastern. It must be considered that all sites coming forward from this process be considered reasonable alternatives, prior to assessment. All of these sites for which there is a required landbank were fully appraised at the Preferred Approach stage MLP and have been fully re-appraised for the Pre-Submission Draft stage MLP in the same manner and to the same level of detail as the preferred sites. For the detailed appraisals of these sites at both the Preferred Approach and Pre-Submission Draft stages, please see Annex E: Site Appraisals accompanying this report. The alternatives are detailed in the following table, along with a summary of the reasons for their non-selection.

Table 8: Alternative 'Non-Preferred' Sites for Primary Sand and Gravel Extraction in the Western Area of the County

Site	Reasons for Non-Selection
A25 Elsenham Quarry, Elsenham	Significant negative impact on landscape that is not capable of mitigation.
A26 Frogs Hall Farm, Takeley	Significant negative impact in that the site is unable to achieve satisfactory highway access.
A27 Land at Ugley, Ugley	The site would potentially require significant infilling (est>500,000t) to achieve satisfactory restoration.
A33 Armigers Farm, Thaxted	Significant negative impact in that the site is unable to achieve satisfactory highway access.
A41 Patch Park Farm, Abridge	Significant negative impact on landscape that is not capable of mitigation. There would also be a highly adverse visual impact on a number of receptors located on the same level as the site and a highly adverse visual impact on a number of receptors on higher land.

6.3 Policy P2 Preferred Sites for Industrial Minerals

In the case of Preferred Sites for industrial minerals the principle of extraction has been accepted and the need for the release of mineral proven.

The Mineral Planning Authority will grant planning permission for industrial mineral workings within the Preferred Sites listed in Table 6 (Preferred Site for Silica Sand Provision) and as shown on the Policies Map, subject to the proposal meeting the detailed development requirements set out in Appendix 5, other relevant policies of the Development Plan for Essex and any other material considerations.

6.3.1 Justification

Policy S7 sets out the commitment and requirement to plan for additional silica sand provision at Martells quarry. This will be met by a Preferred Site to be worked as an extension to the existing quarry.

6.3.2 Impact on SA/SEA Objectives

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B1	SM	1	1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	/	0	/	-1	0	/	/	/	0	0	/	0	1	0	/	/

Significant Effects: Site B1 will have positive impacts associated with biodiversity, water resources, flood risk, restoration and transportation. There will be negative impacts associated with the historic environment, landscape, health and well-being and nuisance; although it is acknowledged that many of these impacts can be mitigated. A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Temporal Effects: Post-working of the site will have positive impacts associated with restoration and after-use. A less negative impact will be realised on agricultural land as per the restoration proposals.

6.3.3 Progress through the SA/SEA Process

Site B1 was appraised at the Preferred Approach MLP stage. There has been no change in any of the impacts from the Pre-Submission Draft assessment of the site.

6.3.4 Proposed Mitigation Measures / Recommendations

No mitigation measures have been recommended. Please see the specialist comments that have informed the Minerals and Waste Planning team's site selection methodology for suitable recommendations.

6.3.5 Secondary, Cumulative and Synergistic Effects of Industrial Minerals Sites

The industrial minerals site will have no secondary, cumulative or synergistic impacts through its selection.

6.3.6 Alternatives Considered for Industrial Minerals Sites and the Reasons for their Rejection / Selection

In response to a series of 'call-for-sites' requests for industrial mineral extraction, starting in 2005, numerous sites came forward from site promoters. It must be considered that all sites coming

forward from this process be considered reasonable alternatives, prior to assessment. All of these sites for which there is a required landbank were fully appraised at the Preferred Approach stage MLP and have been fully re-appraised for the Pre-Submission Draft stage MLP in the same manner and to the same level of detail as the preferred sites. For the detailed appraisals of these sites at both the Preferred Approach and Pre-Submission Draft stages, please see Annex E: Site Appraisals accompanying this report. The alternatives are detailed in the following table, along with a summary of the reasons for their non-selection.

Table 9: Alternative ‘Non-Preferred’ Sites for Industrial Minerals in the County

Site	Reasons for Non-Selection
B2 Slough Farm, Ardleigh Area 2	Now has planning permission (ESS/18/07/TEN).
B3 Park Farm, Ardleigh Area 3	There is a current lack of control over the site and an inability to work the within the plan period.
C2 Bulmer Brickfields, Bulmer	Extraction would not commence until after extraction from the existing permitted area and all necessary restoration phases have been completed.

7 Development Management Policies

7.1 Introduction

Development management policies in this context are the apparatus by which planning applications are determined and planning issues enforced by the Minerals Planning Authority. They use these policies not just to control the effects of unrestricted development, but as a proactive tool for managing development opportunities.

7.2 Policy DM1 Development Management Criteria

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:

1. Local amenity (including demonstrating that the impacts of noise levels, air quality and dust emissions, light pollution and vibration are acceptable);
2. The health of local residents adjoining the site;
3. The quality and quantity of water within water courses, groundwater and surface water;
4. Drainage systems;
5. The soil resource from the best and most versatile agricultural land;
6. Farming, horticulture and forestry
7. Aircraft safety due to the risk of bird strike;
8. The safety and capacity of the highway network;
9. Public Open Space, the definitive Public Rights of Way network and outdoor recreation facilities;
10. The appearance, quality and character of the landscape, countryside and visual environment and any local features that contribute to its local distinctiveness;
11. Land stability;
12. The natural and geological environment (including biodiversity and ecological conditions for habitats and species);
13. The historic environment including heritage and archaeological assets.

7.2.1 Justification

Mineral development, particularly mineral extraction, can have a considerable impact on its surroundings which must be carefully considered. The impacts on the quality of life of local people and on the environment are key considerations when deciding where to locate new mineral development. A wide range of potential adverse impacts can arise and the specific nature of these impacts and the ways of addressing them will vary case by case. The planning policy framework provided by this Plan is considered flexible enough to deal with the variety of issues that may arise and also variations in local circumstances.

7.2.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	+	+	+	+	0	+	+	+	+	0	0	0	0	+	+	+
Medium Term	+	+	+	+	0	+	+	+	+	0	0	0	0	+	+	+
Long Term	+	+	+	+	0	+	+	+	+	0	0	0	+	+	+	+

7.2.3 Significant Effects

There will be positive impacts on biodiversity where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact upon the natural and geological environment including biodiversity and ecological conditions for habitats and species.

There will be positive impacts on water resources and quality where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the quality and quantity of water within water courses, groundwater and surface water.

There will be positive impacts on flood risk minimisation and quality where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on surface water and drainage systems.

There will be positive impacts on the protection of soils including the best and most versatile agricultural land where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the soil resource from the best and most versatile agricultural land.

There will be positive impacts on air quality where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on air quality and the capacity of the highway network.

There will be positive impacts on minimising greenhouse gas emissions where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on air quality and the capacity of the highway network. Although operational emissions are not directly mentioned in the policy, their minimisation is likely to be relevant to achieving a number of other environmental criteria.

There will be positive impacts on the historic environment where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the historic environment including heritage and archaeological assets. Also, where applicable, positive impacts may be associated with minimising impacts on farming, horticulture and forestry where these are linked to historic field boundaries and ancient woodland.

There will be positive impacts on landscapes where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the appearance, quality and character of the landscape, countryside and visual environment and any local features that contribute to its local distinctiveness.

There will be positive impacts on road congestion where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the capacity of the highway network.

There will be positive impacts on human health and well-being where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the health of local residents adjoining the site, the safety and capacity of the highway network, Public Open Space, the definitive public rights of way network and outdoor recreation facilities and also local amenity, including demonstrating that the impacts of noise levels, air quality and dust emissions, light pollution and vibration are acceptable.

There will be positive impacts on minimising public nuisance and effects on amenity where proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact on the safety and capacity of the highway network, landscape, heritage, Public Open Space, the definitive public rights of way network and outdoor recreation facilities and also local amenity, including demonstrating that the impacts of noise levels, air quality and dust emissions, light pollution and vibration are acceptable.

7.2.4 Temporal Effects

There will be positive long term impacts on restoration and aftercare where environmental conditions are not disrupted, or impacts are minimised that may jeopardise the validity or quality of restoration schemes and after-uses.

7.2.5 Secondary, Cumulative and Synergistic Effects

There will be no secondary, cumulative or synergistic impacts on this policy from other policies in the MLP as much depends on the validation of individual proposals and their conformity with the criteria. Despite this, the statement that proposals for minerals development will be permitted subject to it being demonstrated that the development would not have an unacceptable impact upon the cumulative impacts of the proposed development, including the cumulative impact with other mineral and non-mineral development within the vicinity of the proposed development and over time acknowledges the importance of individual schemes together on a wider strategic scale.

7.2.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At this stage the Further Issues and Options MLP looked at effective methods to protect public health from mineral extraction and processing. This was through Option 27 - Requirement of an HIA and whether this should be requested over specific tonnages of 5,000tpa, 10,000tpa, or 15,000tpa, over specific areas of any proposal, any proposal over 5ha, any proposal over 10ha, any proposal over 15ha, or on a case by case basis, where there are possible significant effects. These were deemed as reasonable alternatives where associated public health impacts could be seen to be more prevalent at different scales of operations. Further 'Issues' looked at the establishment of criteria to prevent and mitigate effects of noise from minerals developments, and which can be effectively monitored and enforced, protecting residential amenity and environment from dust impacts, the protection of soils, especially those considered the 'best and most versatile', during minerals development, and design requirements for Agricultural Reservoirs, to ensure effective water storage. These were deemed reasonable alternatives in line with accruing environmental and social mitigation protection and benefits.

Preferred Options Stage

The preferred approach looked at setting out those environmental and health criteria that should be assessed as part of any application without specifying any weighting between different aspects of the environment. As such, specific mention would be given to the effects of noise, lighting and emissions to air (e.g. dust), landscape and countryside, the highway Network (including PROWs), historic and archaeological resources, the water environment including flooding, agricultural grades 1, 2 or 3a, nature conservation particularly ecological or wildlife designations, safeguarding around airports and aerodromes, and the cumulative impacts of the above. This was deemed as a reasonable approach to prevent the likely environmental and health impacts associated from minerals development.

An additional preferred development management criterion looked at non-preferred sites / windfalls and a general presumption against non-preferred sites unless there are either insufficient reserves in the land-bank or some other over-riding justification (although this is not intended to apply to windfalls associated with prior extraction of non-mineral development). This was deemed a reasonable approach and was selected due to a need to maintain a plan-led approach and provide certainty for local communities in respect of mineral development remains paramount, and windfalls for prior extraction associated with alternative development will be assessed on their merits as it's the intent of the preferred approach to safeguarding to avoid mineral sterilisation.

An alternative approach to this was to adopt appropriate criteria for borrow pits, agricultural reservoirs and prior extraction to allow assessment of future sites for minerals extraction and processing etc. This was deemed a reasonable alternative where it would offer a flexible approach to assess sites. It was rejected however due to the criteria based approach weakening the general presumption against non-preferred sites and certainty for plan users, and a difficulty to plan for and rely upon (in terms of contributions to) the apportionment of sand and gravel.

Pre-Submission Draft Stage

The development management policy for the Pre-Submission Draft stage looked at grouping numerous preferred approaches to cover a range of environmental and social criterion in a non-restrictive manner. Other development management issues were separated for clarity.

7.2.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted that there were no appraisable options at that stage, as issues were addressed as questions to be answered through the consultation process.

The SA/SEA of the Preferred Approach MLP highlighted strong positive effects on minimising greenhouse gas emissions and increasing adaptability to climate change through the preferred approach, along with numerous other environmental impacts where a number of environmental considerations will be expected at the application stage. However there are uncertainties over the need to ensure a sustainable use of minerals and transportation.

Through iterative working between the ECC Minerals and Waste Planning Team and the SA/SEA Team, the policy's progression to a Pre-Submission working draft saw positive impacts across a range of sustainability criteria; strengthened with an important recognition of cumulative impacts. This was then progressed for the final Pre-Submission Draft MLP.

7.2.8 Impacts on Indicators

The implementation of Policy DM1 will impact on all the environmental and social SA/SEA indicators as specified in the Sustainability Framework (Annex C), where the policy seeks to protect environmental and social indicators and receptors from the potential impacts from minerals development.

7.2.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

7.3 Policy DM2 Planning Conditions and Legal Agreements

When granting planning permission for minerals developments the Minerals Planning Authority will impose conditions and/ or require legal agreements to mitigate and control the effects of the development and to enhance the environment.

7.3.1 Justification

Planning Obligations, or Section 106 agreements, are legal agreements negotiated between local authorities and developers or are unilateral undertakings made by developers. The use of planning obligations will be in line with the prevailing legislation, guidance and policies of the county. In contrast, planning conditions are the terms under which planning permission is granted. In all cases, the county council will try to use a planning condition to make a proposed development acceptable before resorting to a planning obligation.

7.3.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

7.3.3 Significant Effects

There will be no additional impacts on any of the sustainability objectives, where the policy is essentially raising awareness of the use of conditions and obligations required for minimising impacts from proposals and delivering a number of the other policies.

7.3.4 Temporal Effects

No temporal effects have been identified for this policy

7.3.5 Secondary, Cumulative and Synergistic Effects

There will be no secondary, cumulative or synergistic impacts on this policy from other policies in the MLP, where the policy is essentially raising awareness of the use of conditions and obligations required for minimising impacts from proposals and delivering a number of the other policies.

7.3.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

A policy regarding planning conditions and legal conditions was not explored at this stage of the MLP.

Preferred Options Stage

A policy regarding planning conditions and legal conditions was not explored at this stage of the MLP.

Pre-Submission Stage

The inclusion of a policy regarding planning conditions and legal conditions at Pre-Submission Draft stage offers clarity on the mechanisms to deliver mitigation and environmental enhancement required by developers. The policy specifies these requirements at this stage in line with speeding up the application process in a non-restrictive manner.

7.3.7 Progress through the SA/SEA Process

A policy regarding planning conditions and legal conditions was not explored at the Further Issues and Options stage of the MLP, or the Preferred Approach stage

The inclusion of a Pre-Submission Draft stage policy was deemed to have a number of cumulative positive impacts with the delivery of more specific policies in the MLP; however there will be no direct impacts as a result of it.

7.3.8 Impacts on Indicators

The implementation of Policy DM2 will not have any impacts on the SA/SEA indicators.

7.3.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

7.4 Policy DM3 Primary Processing Plant

Proposals for minerals extraction will be permitted where the primary processing plant and equipment is located within the limits of the mineral site's boundary and the plant would not have any unacceptable impact on local amenity and/ or the surrounding environment.

Proposals for extension sites shall be expected to include the location of the existing processing plant and access arrangements within the planning application.

Where it is demonstrated that the positioning of the primary processing plant within the boundary of the mineral site is not feasible, the exportation of mineral from the site shall not have an unacceptable impact upon amenity and/ or the safety, efficiency and capacity of the highway network.

Minerals shall only be imported to a minerals site, from non-indigenous sources, when it is demonstrated that there are exceptional circumstances or overriding benefits from doing so.

In all cases permission will only be granted for a temporary duration so as not to delay restoration of the site.

7.4.1 Justification

Primary processing enables a higher value use of aggregates. Technological improvements in recent years allow smaller and more mobile plant to be brought onto relatively small mineral sites. Encouraging such on site processing reduces the number of lorry movements on the highway network. The importation of non-indigenous material can increase vehicle movements and extend the overall life of a quarry. Restricting importation gives clarity to the working programme, life of quarry, and vehicle movements.

7.4.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	0	0	0	0	0	0	++	0	0	0	0
Medium Term	0	0	0	+	++	0	0	0	0	0	0	++	0	0	0	0
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0

7.4.3 Significant Effects

There will be no additional impacts on biodiversity, water quality, flood risk, air quality, greenhouse gas emissions, the historic environment, landscapes, human health and well being and amenity where proposals for minerals extraction will be permitted where the primary processing plant and equipment is located within the limits of the mineral site's boundary and the plant would not have any unacceptable impact on local amenity and/ or the surrounding environment. This approach is consistent with other strategic and development management policies

There will be positive impacts where the policy encourages the sustainable use of land by stating that minerals shall only be imported to a minerals site, from non-indigenous sources, when it is demonstrated that there are exceptional circumstances or overriding benefits for doing so. This effectively sets a precedent that stops industrial uses in inappropriate rural areas by linking processing to the primary extraction on-site and within the timescales of that permission.

There will be a significant positive impact on promoting the minerals hierarchy through a non-restrictive policy on the extraction and processing of primary minerals and the extension of existing sites.

There will be a positive impact on the sustainable use of minerals through a non-restrictive policy on the extraction and processing of primary minerals and the extension of existing sites. The policy will have further positive impacts by linking processing to the primary extraction on-site and within the timescales of that permission.

There will be positive impacts on restoration and after-use where in all cases permission will only be granted for a temporary duration so as not to delay the restoration of the site. In addition to this the policy states that minerals shall only be imported to a minerals site, from non-indigenous sources, when it is demonstrated that there are exceptional circumstances or overriding benefits for doing so. This effectively sets a precedent linking processing to the primary extraction on-site and within the timescales of that permission.

There will be no additional impacts on reducing transportation distances of minerals where the policy states that minerals shall only be imported to a minerals site, from non-indigenous sources, when it is demonstrated that there are exceptional circumstances or overriding benefits for doing so. This is a positive approach as it effectively sets a precedent that comparatively reduces mineral miles by linking processing to the primary extraction on-site and within the timescales of that permission.

7.4.4 Temporal Effects

No temporal effects have been identified for this policy other than those associated with the working and post working.

7.4.5 Secondary, Cumulative and Synergistic Effects

There will be no secondary, cumulative or synergistic impacts on this policy from other policies in the MLP.

7.4.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

The issue of primary processing plants and the criteria required for applications was not looked at this stage.

Preferred Options Stage

At this stage the preferred approach was to stipulate a presumption in the MLP at all mineral sites for primary processing and against non-indigenous aggregate importation (except where it can be demonstrated that there are exceptional circumstances or sustainability benefits), and that although the MPA would encourage any water efficiency measures at individual mineral sites it will not make specific provision for this issue. This approach was deemed reasonable and progressed as primary processing of aggregates allows use on higher value applications, technological improvements in recent years allow smaller and more mobile kit to be brought even onto relatively small mineral sites, and encouraging such on site processing reduces the number of lorry movements on the highway network.

An alternative approach was looked at to allow for the importation of a small proportion of non-indigenous materials. This was deemed a reasonable alternative through there being certain circumstances where importation has been allowed, however was not progressed as the general presumption should be against importation. Restricting importation gives clarity to the working programme, life of quarry, and vehicle movements. It also ensures that sites do not become de facto industrial operations which would have an incongruous impact upon the countryside, and while there may be sustainability benefits importation should never be allowed to increase vehicle movements beyond what is acceptable or extend the overall life of a quarry.

Pre-Submission Draft Stage

At the Pre-Submission Draft stage the development management policy regarding primary processing plants evolved into a non-restrictive policy to aid applicants, in regards to environmental considerations, extensions, positioning within site boundaries, the conditions regarding the importation of minerals from non-indigenous sources, and the duration of proposals. This is reasonable in line with the NPPF.

7.4.7 Progress through the SA/SEA Process

The issue of primary processing plants was not looked at the stage Further Issues and Options stage.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach is adopted. Although there are strong positive associations with the Alternative Approach, particularly relating to economic gains and the sustainable use of minerals, these are outweighed by the negative effects on transportation, landscape and societal issues. Allowing for the importation of non-indigenous material from sites which, for whatever given reason, are unable to house a primary processing plant would ensure that all extracted material could be processed to the highest possible grade. Such processing increases the range of uses for which the mineral could be used for as well as increasing its value. However, the transportation of minerals is inherently unsustainable due to the volume and weight of material that would have to be transported. Importation would create a number of additional transport movements, creating potential congestion issues as well as increasing emissions. In addition, the importation of non-indigenous material will likely increase the lifetime of the plant. This could affect local amenity, restoration schemes and the ability to remediate any landscape impacts. There is also the risk that should a site accept non-indigenous material for a period of time, the site may become a de facto mineral processing site, thereby introducing an industrial land use into what would likely be primarily a rural locality.

The policy's progression to the Pre-Submission Draft MLP was assessed as having positive impacts across a range of sustainability criteria.

7.4.8 Impacts on Indicators

The implementation of Policy DM3 is most likely to impact on the following SA/SEA indicators:

- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised
- Number of vehicle movements generated by site operation.
- Congestion ratios of relevant routes.
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

7.4.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

7.5 Policy DM4 Secondary Processing Plant

Proposals for the secondary processing and/ or treatment of minerals will only be permitted at mineral sites where it can be demonstrated that there would be no unacceptable impact upon amenity and/ or the local environment and/ or the safety, efficiency and capacity of the highway network.

The minerals for secondary processing and/or treatment shall be sourced from within the boundary of the mineral working within which the plant is located unless it is demonstrated that there are exceptional circumstances or overriding benefits from sourcing materials from elsewhere to supplement indigenous supply, subject to no unacceptable adverse impacts.

In all cases permission will only be granted for a temporary duration so as not to delay restoration of the site.

7.5.1 Justification

Secondary processing plant such as for concrete batching, the manufacture of coated materials (asphalt), block/ tile/ brick making and other concrete products appear on mineral, industrial and transshipment sites and are currently well spread across the County. Within mineral extraction sites, there may be justification for secondary plant provided that the plant is utilising mainly indigenous mineral sourced from within the site and/ or aggregates from the primary processing plant. Such secondary plant should be for a temporary duration and will be required to be removed from the land upon completion of mineral extraction, with the land subsequently restored to an appropriate after-use within a reasonable timescale following the completion of extraction. Normally, proposals for secondary processing/ treatment facilities within mineral sites will be considered against the relevant development plan policies for industrial uses in rural areas.

7.5.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	0	0	0	+	++	0	0	0	0	0	0	++	0	0	0	0
Medium Term	0	0	0	+	++	0	0	0	0	0	0	++	0	0	0	0
Long Term	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0

7.5.3 Significant Effects

There will be no additional impact on biodiversity, water quality, flood risk, air quality, greenhouse gas emissions, the historic environment, landscapes, where proposals for secondary processing and/or treatment of minerals will only be permitted at mineral sites where it can be demonstrated that there would be no unacceptable impact upon the local environment, and in terms of human health and well being and amenity no unacceptable impacts and/or the safety, efficiency and capacity of the highway network. In addition to this the sourcing of minerals from outside the boundary of the mineral working would only be permitted subject to no unacceptable adverse impact on the local environment. This approach is consistent with other strategic and development management policies.

There will be positive impacts where the policy encourages the sustainable use of land by stating that minerals for secondary processing and/or treatment shall be sourced from within the boundary of the mineral working within which the plant is located unless it is demonstrated that there are exceptional circumstances or overriding benefits from sourcing materials from elsewhere to

supplement indigenous supply, subject to no unacceptable adverse impact on amenity and/ or the local environment. This effectively sets a precedent that stops inappropriate uses in certain areas, and only for a temporary duration.

There will be positive impacts on promoting the minerals supply hierarchy and the sustainable use of minerals where the plan makes provision for sustainable processing plants for concrete batching, coated materials, block/ tile/ brick making and other concrete products on appropriate sites and in appropriate areas.

There will be positive impacts on restoration and after-use where in all cases permission will only be granted for a temporary duration so as not to delay the restoration of the site. In addition to this proposals for secondary processing and/or treatment of minerals will only be permitted at mineral sites where it can be demonstrated that there would be no unacceptable impact upon the local environment. In addition to this the sourcing of minerals from outside the boundary of the mineral working would only be permitted subject to no unacceptable adverse impact on the local environment. This effectively leads to stable environmental conditions from which restoration and proposed after-uses can be based.

There will be no additional impacts on reducing the transportation of minerals where the policy states that minerals for secondary processing and/or treatment shall be sourced from within the boundary of the mineral working within which the plant is located unless it is demonstrated that there are exceptional circumstances or overriding benefits from sourcing materials from elsewhere to supplement indigenous supply. This is a positive approach where it effectively seeks to reduce mineral miles in the first instance.

7.5.4 Temporal Effects

No temporal effects have been identified for this policy other than those associated with the working and post working.

7.5.5 Secondary, Cumulative and Synergistic Effects

There will be no secondary, cumulative or synergistic impacts on this policy from other policies in the MLP.

7.5.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

The issue of secondary processing plants and the criteria required for applications was not looked at this stage.

Preferred Options Stage

At this stage the preferred approach was to support an approach of safeguarding any future secondary processing facilities considered to be of strategic importance and not otherwise safeguarded at a mineral or transshipment site, but considered that there are no additional sites which warrant site specific provision. Non-strategic sites would be addressed through criteria based policies and not specifically safeguarded. This approach was deemed reasonable and progressed where there are at least six asphalt plants widely located in Essex, and only two are located outside existing mineral or transshipment sites and have permanent planning permission. Although undoubtedly important they are small scale 'collection based systems' which are unlikely to serve or meet the long term strategic needs of critical service delivery or infrastructural projects. In addition, the identification of non strategic sites are to be left to the market. In regards to concrete batching or mortar plants, many are located beyond mineral sites and most have permanent planning permission and are physically re-locatable.

An alternative approach explored was that rather than differentiating between what secondary processing facilities are strategic - safeguard all known secondary processing facilities on a site by site basis. This was deemed a reasonable alternative in order to ensure the protection of secondary processing facilities, recognising their value to minerals development in the County.

This approach was rejected however where sites at quarries exist by virtue of the temporary mineral permission utilising the mineral at the site. For facilities associated with secondary processing to extend after the expiry of the time mineral planning permission would effectively retain incongruous industrial developments in the countryside, and extend the length of impacts on local communities and potentially conflict with a site's restoration scheme.

Pre-Submission Draft Stage

At the Pre-Submission Draft stage the development management policy regarding secondary processing plants evolved into a non-restrictive policy to aid applicants, in regards to environmental and traffic considerations, positioning within site boundaries, the conditions regarding the importation of minerals and the duration of proposals.

7.5.7 Progress through the SA/SEA Process

The issue of secondary processing plants was not looked at the stage Further Issues and Options stage.

The SA/SEA of the Preferred Approach MLP recommended that the Preferred Approach is adopted, giving preference to locating secondary processing facilities on-site but recognising the potential for a strategic site. It could however be strengthened with further insight into what would constitute a strategic site in order to provide a measure of clarity.

The Alternative Approach would have broadly positive impacts; however it may occur that secondary processing plants could be sited in locations that remain strategic post mineral working; a retained secondary processing plant could conflict with any potential restoration scheme and facilitate an industrial use in a rural area. It also avoids determining strategic sites, with a site-by-site approach being put forward instead. This leads to difficulties in determining cumulative effects and could also lead to a clustering of facilities.

The progression to a Pre-Submission Draft stage policy will see positive impacts across a range of sustainability criteria.

7.5.8 Impacts on Indicators

The implementation of Policy DM4 is most likely to impact on the following SA/SEA indicators:

- Capacity of secondary processing / recycling facilities
- Amount of recycled material utilised
- Number of vehicle movements generated by site operation.
- Congestion ratios of relevant routes.
- Complaints regarding dust (Environmental Health and ECC).
- Complaints regarding noise (Environmental Health and ECC).
- Conditions to planning applications regarding hours of operation, emission/release parameters, and transport agreements etc.
- Traffic volumes in key locations.
- Facilities within 100metres of residential areas
- Residential developments within 100metres of sources of noise and vibration

7.5.9 Proposed Mitigation Measures / Recommendations

No mitigation measures or recommendations have been identified at this stage, where issues have been resolved through iterative working as detailed in the above 'Progress through the SA/SEA Process' section for this policy.

8 Implementation, Monitoring and Review

8.1 Introduction

Monitoring is important to understand the characteristics of an area, assessing the impact of policies upon this area and consequently whether the strategy is delivering sustainable development. The data collected through monitoring therefore allows for a review, and subsequently a potential modification, of the policies contained within this Plan. Policy IMR1 sets out the specific monitoring requirements regarding the sand and gravel landbank.

8.2 Policy IMR1 Monitoring and Review

The Plan will be monitored and reviewed within five years of adoption as part of a “plan, monitor, and manage” approach to forward planning, or should the landbank fall below the minimum requirement, whichever comes sooner.

8.2.1 Justification

The MLP must show how the Vision, objectives and core strategy will be delivered, by whom and by when. It is important that all parties essential to the delivery of the plan, including landowners, mineral operating companies and developers are signed up to it. The planned approach is based on the evidence available at the time of plan preparation. However, as the data that has informed plan preparation changes and is updated over time there will be a need to monitor what is happening and to respond in the most appropriate way.

8.2.2 Impact on SA/SEA Objectives

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short Term	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Medium Term	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Long Term	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

8.2.3 Significant Effects

It is acknowledged that the processes of monitoring and review as stipulated in the policy offers a flexible approach to the landbank which can adapt to future economic/market based changes. As a result of this, all impacts on the sustainability objectives will be uncertain at this stage.

It is recommended however that an effective way of disseminating information would be required to ensure that the public is aware of any potential changes to the landbank and the possible identification of sites.

8.2.4 Temporal Effects

No temporal effects have been identified for this policy.

8.2.5 Secondary, Cumulative and Synergistic Effects

Although it is possible that there will be future cumulative impacts on Policy S6 from Policy IMR1, at this stage it is impossible to determine whether these will be positive, negative or changeable from the current direction and methodology regarding the apportionment and landbank.

8.2.6 Alternatives Considered and the Reasons for Their Rejection / Selection

Further Issues and Options Stage:

At the Further Issues and Options stage of the MLP, this policy was explored with the view that efficient policy monitoring and review of the development document would be crucial to a successful core strategy document, as stated by PPS 1 and PPS 12. This was progressed in light of the lack of any reasonable alternatives.

Preferred Options Stage

There was no specific policy regarding monitoring at this stage of the MLP, however it was acknowledged that there will be a need to monitor data and to respond in the most appropriate way, through an Annual Monitoring Report (AMR) to review the progress of Local Development Documents against the milestones set out in the Local Development Scheme and assess the extent to which the policies in the documents are being achieved. This was to be achieved through a comprehensive suite of performance indicators and targets. Similarly, the AMRs of the district councils will be examined each year to assess whether the supply of aggregates might be restricting housing and/or commercial developments; if it is, the MPA's own AMR will consider how the problem could be rectified. This approach and text was progressed.

Pre-Submission Draft Stage

At the Pre-Submission Draft stage, the monitoring approach of the preferred approach was reiterated. In addition to this, it was felt necessary that the alternative of identifying a specific policy was required to address the issue of the landbank; separating this element from the previously identified 'Landbank' policy in the Preferred Approach stage MLP (Preferred Approach 8). The landbank element of this preferred approach has been incorporated into Policy S6 in the Pre-Submission MLP, and the monitoring / review element given its own policy under Policy IMR1. This was deemed a reasonable approach given the County's approach to landbanks and an importance that this be highlighted.

8.2.7 Progress through the SA/SEA Process

The SA/SEA of the Further Issues and Options MLP highlighted the issue was crucial to a successful core strategy document, as stated by PPS 1 and PPS 12, and that there are no appraisable Options relating to policy monitoring and review.

There was no specific policy regarding monitoring at the Preferred Approach MLP and as such no appraisal was undertaken of the text.

The progression to a Pre-Submission Draft MLP policy saw monitoring information divided between general monitoring of the plan in text, and the specific monitoring of landbanks in policy. Although all impacts from this policy will be uncertain at this stage there will be secondary positive impacts related to other wider objectives through a flexible approach and continual monitoring regarding landbanks.

8.2.8 Impacts on Indicators

It is uncertain what SA/SEA indicators the implementation of Policy IMR1 is most likely to impact on at this stage.

8.2.9 Proposed Mitigation Measures / Recommendations

It is recommended that an effective way of disseminating information would be required to ensure that the public is aware of any potential changes to the landbank and the possible identification of sites.

9 Conclusions

9.1 The Vision

The Vision of the Pre-Submission Draft MLP is summarised by its short-medium term and long term impacts in the following tables.

9.1.1 Short – Medium Term Impacts of the Vision

Table 10: Short-Medium Term Impacts of the Vision

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short to Medium Term	+	0	+	+	++	+	+	+	+	++	++	++	0	++	0	0

The appraisal of the plan's Vision highlights numerous positive short to medium term impacts. These correspond to significant positive impacts on:

- Promoting the Minerals Supply Hierarchy and moving minerals waste up the waste management hierarchy.
- Enabling communities to participate fully in the decision making process.
- Maximising opportunities for economic development.
- The sustainable use of minerals.
- Reducing the transportation of minerals and promoting sustainable transport.

In addition to this, positive impacts will be realised for:

- Biodiversity.
- Minimising flood risk.
- The sustainable use of land.
- Air quality.
- Minimising greenhouse gas emissions and adaptability to climate change.
- The historic environment.
- Landscapes.

There will be no direct short to medium term impacts, as a result of the MLP Vision, on:

- Water quality and resources.
- Restoration and after-care.
- Human health and well-being.
- Minimising nuisances and impacts on local amenity.

9.1.2 Long Term Impacts of the Vision

Table 11: Long Term Impacts of the Vision

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Long Term	++	0	+	+	++	+	+	+	++	++	+	++	++	++	++	++

The long term impacts of the plan's Vision see further positive impacts realised for certain objectives. In addition to those identified for the short to medium term, restoration and after-use as dealt with in the Vision will have significant positive impacts on the sustainability objectives related to:

- Biodiversity.
- Landscapes.
- Restoration and after-care.
- Health and well-being.
- Local amenity.

9.2 Aims and Objectives

The plan's aims and strategic objectives have been appraised to identify their compatibility with the sustainability objectives, which in turn have been derived from a combination of the key issues identified for/in Essex that could be addressed or impacted upon by minerals development, as well as the current state of the economic, social and environmental themes through baseline information and relevant plans and programmes.

9.2.1 Compatibility with Sustainability Objectives

Table 12: MLP Aims and Objectives Compatibility with Sustainability Objectives

Aims of MLP	1				2	3		4	5	6	7			8
Strategic Objectives of MLP	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SA/SEA Objective														
1 Biodiversity	0	0	0	0	0	0	0	0	0	/	✓	✓	✓	0
2 Water quality / resources	0	0	0	0	0	0	✓	0	0	0	0	0	0	0
3 Flooding	0	0	0	0	0	0	✓	0	0	0	0	0	0	0
4 Land / Soils	0	0	✓	0	0	0	✓	0	✓	0	0	0	0	0
5 Minerals supply hierarchy	0	0	✓	0	0	0	0	✓	0	✓	0	0	0	0
6 Air quality	0	0	0	0	0	0	✓	0	0	0	0	0	0	✓
7 GHG and climate change	0	0	0	0	✓	0	0	0	0	0	0	0	0	0
8 Historic environment	0	0	0	0	0	0	0	0	0	/	✓	0	✓	0
9 Landscapes	0	0	✓	0	/	0	0	✓	0	/	0	✓	✓	0
10 Community participation	/	0	0	✓	0	✓	0	0	0	0	0	0	0	0
11 Economic development	0	0	✓	0	0	0	0	0	0	0	0	0	0	✓
12 Sustainable mineral use	✓	✓	✓	✓	0	0	0	✓	✓	✓	0	0	0	✓
13 Restoration and	0	0	0	0	✓	0	0	0	0	0	0	✓	0	0

Aims of MLP	1				2	3		4	5	6	7			8
Strategic Objectives of MLP	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SA/SEA Objective														
after-use														
14 Transportation	0	✓	0	0	✓	0	✓	0	0	0	0	0	0	✓
15 Health and well-being	0	0	0	0	0	0	✓	0	0	/	0	0	✓	/
16 Nuisance and amenity	/	0	0	0	0	✓	✓	0	0	/	0	0	✓	/

The aims and strategic objectives of the MLP have positive impacts on all of the Sustainability Objectives. Where uncertain impacts are likely to occur, the majority of these will be rectified in other elements of the Local Plan where site specific characteristics and impacts are more relevant, such as site allocation criteria and assessments and development management policies. Similarly, certain objectives and criteria of the Sustainability Framework are more relevant to these elements.

9.3 Strategy Policies

The strategic policies of the MLP look at county-wide issues regarding minerals development. The short to medium and long term impacts of the MLP's strategic policies are summarised in the following tables.

9.3.1 Short – Medium Term Impacts of the Strategy Policies

Table 13: Short-Medium Term Impacts of the Strategy Policies

Strategic Policies of MLP	S2	S1	S3	S4	S5	S8	S9	S6	S7	S10	S11	S12
SA/SEA Objective												
1 Biodiversity	0	0	0	0	0	0	0	0	0	+	0	0
2 Water quality / resources	0	0	+	0	0	0	0	0	0	+	0	0
3 Flooding	0	0	++	0	0	0	0	0	0	+	0	+
4 Land / Soils	++	0	0	+	+	++	++	+	+	+	0	+
5 Minerals supply hierarchy	++	0	0	++	++	++	0	++	++	0	0	0
6 Air quality	+	0	+	+	0	0	++	0	0	+	++	0
7 GHG and climate change	++	0	++	+	0	0	++	0	0	+	+	0
8 Historic environment	0	0	0	0	0	0	0	0	0	0	0	+
9 Landscapes	0	0	0	0	0	0	0	0	0	+	0	0
10 Community participation	0	0	0	0	0	0	0	0	0	0	0	0
11 Economic development	+	0	0	0	+	+	++	++	+	0	0	0

Strategic Policies of MLP	S2	S1	S3	S4	S5	S8	S9	S6	S7	S10	S11	S12
SA/SEA Objective												
12 Sustainable mineral use	++	0	0	++	++	++	+	++	++	0	0	0
13 Restoration and after-use	0	0	+	0	0	0	0	0	0	0	0	0
14 Transportation	++	0	+	+	+	0	++	0	0	0	++	0
15 Health and well-being	+	0	0	0	0	0	0	0	0	+	+	0
16 Nuisance and amenity	++	0	0	0	0	0	0	0	0	+	+	0

As can be seen, positive impacts will be realised on the majority of sustainability objectives, where impacts are associated with the short to medium term working of sites. Significant positive impacts are realised for:

- Minimising flood risk.
- The sustainable use of land.
- Promoting the Minerals Supply Hierarchy and moving minerals waste up the waste management hierarchy.
- Air quality.
- Minimising greenhouse gas emissions and adapting to climate change.
- Economic development.
- The sustainable use of minerals.
- Reducing the transportation of minerals and promoting sustainable transport.
- Minimising nuisance and impacts on local amenity.

In addition to this, positive impacts will be realised:

- Biodiversity.
- Water quality.
- The historic environment.
- Landscapes.
- Restoration and after-care.
- Health and well-being.

There is only one sustainability objective that will have no impact as a result of the strategic policies; that related to community participation in the plan-making process. It is noted however, that the process of public consultation that has and will follow all iterations of the plan is mandatory and does not need stating specifically in policy.

9.3.2 Long Term Impacts of the Strategy Policies

Table 14: Long Term Impacts of the Strategy Policies

Strategic Policies of MLP	S2	S1	S3	S4	S5	S8	S9	S6	S7	S10	S11	S12
SA/SEA Objective												
1 Biodiversity	++	0	+	0	0	0	0	0	0	+	0	++
2 Water quality / resources	0	0	+	0	0	0	0	0	0	+	0	++
3 Flooding	0	0	++	0	0	0	0	0	0	+	0	+
4 Land / Soils	++	0	0	0	+	++	0	+	+	+	0	+
5 Minerals supply hierarchy	++	0	0	++	++	++	0	++	++	0	0	0
6 Air quality	+	0	+	0	0	0	0	0	0	0	0	0
7 GHG and climate change	++	0	++	0	0	0	0	0	0	0	0	+
8 Historic environment	0	0	0	0	0	0	0	0	0	0	0	+
9 Landscapes	0	0	0	/	0	0	0	0	0	+	0	+
10 Community participation	0	0	0	0	0	0	0	0	0	0	0	0
11 Economic development	/	0	0	0	0	+	0	++	+	0	0	0
12 Sustainable mineral use	++	0	0	++	++	++	0	++	++	0	0	0
13 Restoration and after-use	++	0	+	/	+	0	0	0	0	0	0	++
14 Transportation	++	0	+	0	0	0	0	0	0	0	0	0
15 Health and well-being	++	0	0	0	0	0	0	0	0	+	0	+
16 Nuisance and amenity	++	0	0	0	0	0	0	0	0	+	0	++

The impacts of the strategic policies can be seen to be strengthened in the long term through the implementation of stated required and preferred restoration proposals. There will be significant positive impacts on all of the sustainability objectives bar those related to:

- The historic environment.
- Landscapes.
- Community participation.

Regarding landscapes, where it could be expected that Policy S12 Restoration and After-use should be aiming to restore minerals sites in a significantly positive manner, it is acknowledged that there is a degree of unavoidable uncertainty until sites are determined in the Waste Local Plan.

Uncertainties in the long term have been highlighted in regards to landscapes, economic development and restoration. This is due to specific proposals for after-use being realised on a site

by site basis and their potential for job creation in after-use and requirements for inert waste to restore previous conditions/levels.

9.3.3 Impacts of the Preferred Transhipment Site in the County

In the accordance with Policy S9, a single additional new transhipment site at Ballast Quay, Fingringhoe has been proposed for safeguarding in the MLP. The appraisal of this site is below.

Table 15: Impacts of the Preferred Transhipment Site

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
D2	SM	1	0	-1	2	0	1	1	1	1	0	/	0	/	2	-1	-1
	L	/	0	/	/	0	0	0	0	/	0	/	0	/	0	/	/

Site D2 will have significant positive impacts with regards:

- Transportation
- Agricultural land

Positive impacts will be realised regarding:

- Biodiversity
- Air quality
- Greenhouse gas emissions
- The historic environment
- Landscape

There will be negative impacts on

- Flood risk
- Health and well-being
- Nuisance

There will be no long term positive or negative impacts as a result of the site for transhipment due to the length of the permission. Post-plan period, any impacts will either not be valid or uncertain.

9.4 The Minerals Provision Figure

The minerals provision figure of the MLP is summarised by its short-medium term and long term impacts in the following tables.

Short – Medium Term Impacts of the Minerals Provision Figure

Table 16: Short-Medium Term Impacts of the Minerals Provision Figure

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short to Medium Term	/	/	/	/	++	/	/	/	/	0	+	/	0	/	/	/

The appraisal of the plan's minerals provision figure highlights few short to medium term impacts. There is a significant positive impact on:

- Promoting the Minerals Supply Hierarchy and moving minerals waste up the waste management hierarchy.

In addition to this, a positive impact will be realised for:

- Economic development

There will be uncertain short to medium term impacts on:

- Biodiversity
- Water quality
- Minimising flood risk
- Agricultural land
- Air quality
- Greenhouse gas emissions
- The historic environment
- Landscapes
- Sustainable mineral use
- Transportation
- Health and well-being
- Nuisance and amenity

9.4.1 Long Term Impacts of the Minerals Provision Figure

Table 17: Long Term Impacts of the Minerals Provision Figure

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Long Term	+	/	/	/	0	0	/	/	-	0	0	0	+	0	+	+

The long term impacts of the plan's minerals provision figure will see an increase in positive impacts realised for certain objectives. In addition to those identified for the short to medium term, restoration and after-use will have significant positive impacts on the sustainability objectives related to:

- Biodiversity
- Restoration and after-care
- Health and well-being
- Local amenity

There will be however a negative impact on:

- Landscapes

There will be uncertain long term impacts on:

- Water quality
- Minimising flood risk
- Agricultural land
- Greenhouse gas emissions
- The historic environment

9.5 Preferred Sites for Sand & Gravel

9.5.1 North-Eastern Sites

As stated in The Strategy, the majority of the sites will be located in the central and north-eastern parts of the County to support key areas of growth and development and reduce mineral miles. The following sites are preferred sites for sand and gravel in the north-eastern area of the County.

- A3 Bradwell Quarry, Rivenhall Airfield
- A4 Bradwell Quarry, Rivenhall Airfield
- A5 Bradwell Quarry, Rivenhall Airfield
- A6 Bradwell Quarry, Rivenhall Airfield
- A7 Bradwell Quarry, Rivenhall Airfield
- A13 Colchester Quarry – Five Ways Fruit Farm, Stanway
- A20 Sunnymead, Alresford
- A31 Maldon Road, Birch
- B1 Martells Quarry Slough Farm, Ardleigh Area 1

Table 18: Short-Medium Term Impacts of the Preferred Sites for Sand and Gravel in the North-Eastern Area of the County

Preferred Sites	A3	A4	A5	A6	A7	A13	A20	A31	B1
SA/SEA Objective									
1 Biodiversity	1	1	1	1	1	1	-1	1	1
2 Water quality / resources	1	1	1	1	1	1	-1	-1	1
3 Flooding	1	1	1	1	1	1	1	-1	1
4 Land / Soils	-2	-2	-2	-2	-2	-2	-1	-1	-2
5 Minerals supply hierarchy	0	0	0	0	0	0	0	0	0
6 Air quality	/	/	/	/	/	/	/	/	/
7 GHG and climate change	/	/	/	/	/	/	/	/	/
8 Historic environment	-1	-1	-1	-1	-1	-1	-1	-1	-1
9 Landscapes	1	1	1	-1	-1	1	-1	-1	1
10 Community participation	0	0	0	0	0	0	0	0	0
11 Economic development	/	/	/	/	/	/	/	/	/
12 Sustainable mineral use	0	0	0	0	0	0	0	0	0
13 Restoration and after-use	1	1	1	1	1	1	1	1	1
14 Transportation	1	1	1	1	1	1	1	1	1
15 Health and well-being	/	/	/	-1	-1	-1	-1	-1	-1
16 Nuisance and amenity	/	-1	-1	-1	-1	-1	-1	-1	-1

As can be seen from the above table, there will be minimal significant impacts on the sustainability objectives from extraction at any of the sites. Although Objective 4 regarding soils has a number of significantly negative impacts highlighted, it is acknowledged that these sites are not the most versatile 'grade 1' soils, but are 'grade 2' soils. As such, the scoring for these objectives should not mean that the site should not be extracted.

The majority of the sites will have positive impacts associated with and relevant to minerals extraction for:

- Biodiversity
- Water resources
- Flooding
- Landscapes
- Restoration and After-use
- Transportation

Although it is acknowledged that many of these can be mitigated, negative impacts have been highlighted for the majority of sites regarding:

- The historic environment
- Health and well-being
- Nuisance and amenity

Table 19: Long Term Impacts of the Preferred Sites for Sand and Gravel in the North-Eastern Area of the County

Preferred Sites	A3	A4	A5	A6	A7	A13	A20	A31	B1
SA/SEA Objective									
1 Biodiversity	1	1	1	1	1	1	1	1	/
2 Water quality / resources	0	0	0	0	0	0	1	1	0
3 Flooding	/	/	/	/	/	/	/	/	/
4 Land / Soils	-1	-1	-1	-1	-1	-2	-1	0	-1
5 Minerals supply hierarchy	0	0	0	0	0	0	0	0	0
6 Air quality	/	/	/	/	/	/	/	/	/
7 GHG and climate change	/	/	/	/	/	/	/	/	/
8 Historic environment	/	/	/	-1	/	/	/	-1	/
9 Landscapes	/	/	/	/	/	/	/	/	0
10 Community participation	0	0	0	0	0	0	0	0	0
11 Economic development	/	/	/	/	/	/	/	/	/
12 Sustainable mineral use	0	0	0	0	0	0	0	0	0
13 Restoration and after-use	1	1	1	1	1	1	1	1	1
14 Transportation	0	0	0	0	0	0	0	0	0
15 Health and well-being	/	/	/	/	/	/	/	/	/
16 Nuisance and amenity	0	0	1	0	1	1	/	1	/

The majority of the sites will have positive impacts associated with and relevant to minerals extraction for:

- Restoration and After-use

There are very few negative impacts resulting from the restoration proposals for the sites. Despite this, negative impacts have been highlighted for the majority of sites regarding:

- Soils / agricultural land

There will be 4 cases of restoration to amenity, which will have positive impacts on Objective 16.

9.5.2 Central Sites

As stated in The Strategy, the majority of the sites will be located in the central and north-eastern parts of the County to support key areas of growth and development and reduce mineral miles. The following sites are preferred sites for sand and gravel in the central area of the County.

- A9 Broadfield Farm, Rayne
- A22 Little Bullocks Farm, Little Canfield
- A23 Little Bullocks Farm, Little Canfield
- A38 Blackleys Quarry, Great Leighs
- A39 Blackleys Quarry, Great Leighs
- A46 Land at Colemans Farm
- A40 Land at Shellows Cross Farm

Table 20: Short-Medium Term Impacts of the Preferred Sites for Sand and Gravel in the Central Area of the County

Preferred Sites	A9	A22	A23	A38	A39	A46	A40
SA/SEA Objective							
1 Biodiversity	1	1	1	1	1	/	1
2 Water quality / resources	-1	-1	1	1	1	-1	-1
3 Flooding	1	-1	1	1	1	-1	1
4 Land / Soils	-2	-2	-2	-1	-1	-2	-1
5 Minerals supply hierarchy	0	0	0	0	0	0	0
6 Air quality	/	/	/	/	/	/	/
7 GHG and climate change	/	/	/	/	/	/	/
8 Historic environment	-1	1	1	-1	-1	-1	-1
9 Landscapes	-1	-1	-1	1	-1	-1	-1
10 Community participation	0	0	0	0	0	0	0
11 Economic development	/	/	/	/	/	/	/
12 Sustainable mineral use	0	0	0	0	0	0	0
13 Restoration and after-use	1	1	1	1	1	1	1
14 Transportation	1	1	1	1	1	-1	1
15 Health and well-being	-1	/	-1	-1	-1	-1	-1
16 Nuisance and amenity	-1	/	-1	-1	-1	-1	-1

As can be seen from the above table, there will be minimal significant impacts on the sustainability objectives from extraction at any of the sites. Although Objective 4 regarding soils has a number of significantly negative impacts highlighted, it is acknowledged that these sites are not the most versatile 'grade 1' soils, but are 'grade 2' soils. As such, the scoring for these objectives should not mean that the site should not be extracted.

The majority of the sites will have positive impacts associated with and relevant to minerals extraction for:

- Biodiversity
- Flooding
- Restoration and After-use
- Transportation

Although it is acknowledged that many of these can be mitigated, negative impacts have been highlighted for the majority of sites regarding:

- Water resources
- The historic environment
- Landscapes
- Health and well-being
- Nuisance and amenity

Table 21: Long Term Impacts of the Preferred Sites for Sand and Gravel in the Central Area of the County

Preferred Sites	A9	A22	A23	A38	A39	A46	A40
SA/SEA Objective							
1 Biodiversity	1	1	1	/	/	1	1
2 Water quality / resources	0	0	0	0	0	1	0
3 Flooding	/	/	/	/	/	/	/
4 Land / Soils	-1	-1	-1	1	/	-2	-1
5 Minerals supply hierarchy	0	0	0	0	0	0	0
6 Air quality	/	/	/	/	/	0	/
7 GHG and climate change	/	/	/	/	/	/	/
8 Historic environment	/	/	/	/	-1	/	/
9 Landscapes	/	/	/	/	/	-1	/
10 Community participation	0	0	0	0	0	0	0
11 Economic development	/	/	/	/	/	/	/
12 Sustainable mineral use	0	0	0	0	0	0	0
13 Restoration and after-use	1	1	1	1	1	1	1
14 Transportation	0	0	0	0	0	0	0
15 Health and well-being	/	/	/	/	/	1	/
16 Nuisance and amenity	1	1	1	0	0	1	0

The majority of the sites will have positive impacts associated with and relevant to minerals extraction for:

- Biodiversity
- Restoration and After-use
- Nuisance and Amenity

There are very few negative impacts resulting from the restoration proposals for the sites. Despite this, negative impacts have been highlighted for the majority of sites regarding:

- Soils / agricultural land

9.6 Preferred Sites for Industrial Minerals

9.6.1 Impacts of the Preferred Sites for Industrial Minerals

Policy S7 sets out the commitment and requirement to plan for additional silica sand provision at Martells quarry. This will be met by a Preferred Site to be worked as an extension to the existing quarry.

Site		Sustainability Objective															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B1	SM	1	1	1	-2	0	/	/	-1	-1	0	/	0	1	1	-1	-1
	L	/	0	/	-1	0	/	/	/	0	0	/	0	1	0	/	/

Site B1 will have positive impacts associated with:

- Biodiversity
- Water resources
- Flood risk
- Restoration and After-use
- Transportation

Although it is acknowledged that many of the following can be mitigated, there will be negative impacts associated with:

- The historic environment
- Landscape
- Health and well-being
- Nuisance

A significant negative impact has been awarded due to a loss of grade 2 agricultural soil; although it is acknowledged that this should not prevent the site from being extracted.

Post-working of the site will have positive impacts associated with restoration and after-use. A less negative impact will be realised on agricultural land as per the restoration proposals.

9.7 Development Management Policies

Development management policies are the apparatus by which planning applications are determined and planning issues enforced by the Minerals Planning Authority. They use these policies not just to control the effects of unrestricted development, but as a proactive tool for managing development opportunities. The short to medium and long term impacts of the MLP's development management policies are summarised in the following table.

9.7.1 Short – Long Term Impacts of the Development Management Policies

Strategic Policies of MLP	Short – Medium Term Impacts				Long Term Impacts			
	DM1	DM2	DM3	DM4	DM1	DM2	DM3	DM4
1 Biodiversity	+	0	0	0	+	0	0	0
2 Water quality / resources	+	0	0	0	+	0	0	0
3 Flooding	+	0	0	0	+	0	0	0
4 Land / Soils	+	0	+	+	+	0	0	0

Strategic Policies of MLP	Short – Medium Term Impacts				Long Term Impacts			
	DM1	DM2	DM3	DM4	DM1	DM2	DM3	DM4
5 Minerals supply hierarchy	0	0	++	++	0	0	0	0
6 Air quality	+	0	0	0	+	0	0	0
7 GHG and climate change	+	0	0	0	+	0	0	0
8 Historic environment	+	0	0	0	+	0	0	0
9 Landscapes	+	0	0	0	+	0	0	0
10 Community participation	0	0	0	0	0	0	0	0
11 Economic development	0	0	0	0	0	0	0	0
12 Sustainable mineral use	0	0	++	++	0	0	0	0
13 Restoration and after-use	0	0	0	0	+	0	+	+
14 Transportation	+	0	0	0	+	0	0	0
15 Health and well-being	+	0	0	0	+	0	0	0
16 Nuisance and amenity	+	0	0	0	+	0	0	0

In the short to medium term there will be significant positive impacts relating to

- The promotion of the minerals supply hierarchy.
- Improving the sustainable use of minerals.

Additionally there will be positive impacts on all of the sustainability objectives bar those relating to:

- Economic development.
- Community participation.

Regarding economic development, this can be considered a strategic issue that is an underlying theme throughout the need for minerals extraction and development, and does not need to be a determining factor on an application basis. Community participation is not needed to be specifically mentioned in policy, as it is dealt with through the public consultation requirements of the plan making process.

In the long term many of the sustainability objectives will have no impacts where permissions will have ceased in a development management context. Long term positive impacts are limited to those elements of the policies that specifically relate to restoration and after-use.

9.8 Implementation, Monitoring and Review Policy

Monitoring is important to understand the characteristics of an area, assessing the impact of policies upon this area and consequently whether the strategy is delivering sustainable development. The data collected through monitoring therefore allows for a review, and subsequently a potential modification, of the policies contained within the MLP.

9.8.1 Short – Long Term Impacts of the Implementation, Monitoring and Review Policy

	Sustainability Objectives															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Short to Long Term	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

It is acknowledged that the processes of monitoring and review offer a flexible approach to the landbank which can adapt to future economic/market based changes. As a result of this, all impacts on the sustainability objectives will be uncertain at this stage.

It is recommended however that an effective way of disseminating information would be required to ensure that the public is aware of any potential changes to the landbank and the possible identification of sites.

10 Monitoring and Next Steps

10.1 Monitoring

The significant sustainability effects of implementing a Local Plan must be monitored in order to identify unforeseen adverse effects and to be able to undertake appropriate remedial action. Annex C of this Environmental Report contains suggested indicators in order to monitor each of the Sustainability Objectives, however these may not all be collected due to limited resources and difficulty in data availability or collection.

Appendix 14 of the 'Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents' guidance (ODPM) provides further details on the implementation and monitoring of LDFs. It states that it is not necessary to monitor everything, but that monitoring should focus on significant sustainability effects, e.g. those that indicate a likely breach of international, national or local legislation, that may give rise to irreversible damage or where there is uncertainty and monitoring would enable preventative or mitigation measures to be taken.

10.2 Next Steps

10.2.1 Consultation

To enable the community and other stakeholders to continue to contribute to the Plan, there is now a period of formal consultation on the Pre-Submission Draft MLP. This Environmental Report will be published for consultation alongside the Plan, so that it might facilitate more informed responses. It is also important that there is an opportunity for questions to be raised regarding any of the judgements made within this SA/SEA, and further evidence put forward that may help to consider sustainability effects.

Following consultation, the Replacement Minerals Local Plan: Pre-Submission Draft will be submitted to the Government for approval. The approval process involves a public examination held by a Planning Inspector. The Inspector has the power to approve the Plan, with or without alteration, or reject it. The Inspector will be able to refer to responses and the recommendations set out in this Environmental Report, which will be made following this current consultation.

10.2.2 SA/SEA Adoption Statement

Once a plan or programme has been adopted, the SEA Directive requires those responsible for preparing it, in this case Essex County Council, to provide the public and the Consultation Bodies with information on how environmental considerations and consultation responses are reflected in the plan or programme and how its implementation will be monitored in the future.

The Directive states that:

Plan or programme proponents should ensure that, when a plan or programme is adopted, the Environmental Consultation Bodies and the public are informed and the following items are made available to those so informed:

(a) the plan or programme as adopted;

(b) a statement summarising how environmental considerations have been integrated into the plan or programme...[including] the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with, and

(c) the measures decided concerning monitoring [of the plan]

Annex 9(1)

In light of this requirement, Essex County Council should prepare an SA/SEA Adoption Statement setting out the above information (reporting on how sustainability considerations have been taken into account rather than environmental considerations only).

This information is issued by
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