



Oxfordshire Minerals and Waste Development Framework

Sustainability Appraisal/Strategic Environmental Assessment

Aggregates Apportionment Options – Addendum Report
March 2012



Revision Schedule

Aggregates Apportionment Options – Addendum Report

March 2012

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1 Introduction

1.1 Oxfordshire Minerals and Waste Development Framework

Oxfordshire County Council ('the Council') is preparing a Minerals and Waste Development Framework (MWDF) for Oxfordshire. The Minerals and Waste Core Strategy Development Plan Document (MWCS) will form a key part of the MWDF and will provide a strategic vision and overall strategy for meeting known and anticipated minerals and waste development requirements in Oxfordshire to 2030.

1.2 Minerals Supply

To inform the preparation of the emerging minerals supply policies, the Council commissioned consultants Atkins to produce a robust local assessment of the quantities of sand and gravel and crushed rock that need to be supplied from local quarries over the period to 2030. The assessment also included the potential supply of secondary and recycled materials.

Further background information on the assessment and the final consultants' report can be found on the Council's website – www.oxfordshire.gov.uk.

1.3 Sub-regional Apportionments

Four methods of predicting future aggregates demand in Oxfordshire were adopted by consultants Atkins. These together with the related sub-regional apportionment levels are shown in Table 1.1 below. The table also includes the Council's recommended apportionment (which is based on the average of outcomes of the Atkins Report methods 2 and 4) and the current South East Plan apportionment.

Table 1.1 Sub regional apportionment levels considered

| Sub regional apportionments | Sand and gravel | Crushed rock | Secondary & recycled aggregates |
|---|-----------------|--------------|---------------------------------|
| Atkins Method 1: 2003 Sub regional apportionment methodology on regional total of 11.12 mtpa | 1.53 | n/a | n/a |
| Atkins Method 2: median past sales with smoothing | 1.29 | 0.62 | 0.64 |
| Atkins Method 3: housing proxy for demand | 1.58 | 0.81 | 0.88 |
| Atkins Method 4: population proxy for demand | 1.23 | 0.64 | 0.69 |
| OCC preferred/recommended (Cabinet Feb 2011) Average of outcomes of methods 2 and 4 (Atkins Jan 2011) | 1.26 | 0.63 | 0.67 |
| SE Plan (May 2009) Apportionment | 1.82 | 1.0 | 0.9 |

1.4 Sustainability Appraisal

URS (formerly URS/Scott Wilson) was commissioned by Oxfordshire County Council to undertake an independent Sustainability Appraisal incorporating Strategic Environmental Assessment¹ (hereby referred to as SA) of the above apportionment levels. This work was undertaken and reported in July 2011 (Aggregates Apportionment Options SA/SEA Report, see:

<http://www.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/environmentandplanning/wasteandrecycling/planning/framework/sustainableappraisal.pdf>

The purpose of this addendum report is to consider two further apportionment options for sharp sand and gravel, which have arisen from a consideration of consultation responses to the July 2011 report. SA seeks to identify the economic, social and environmental impacts of plan options/policies and suggests ways to avoid or minimise negative impacts and maximise positive ones.

1.5 Approach to SA of Apportionment Options

The approach to testing the sustainability of the various apportionment levels was set out at section 1.5 of the July 2011 report. Six potential levels of provision were generated by the Akins report, but as some of these apportionment levels were very similar, it was agreed to group them together to form single appraisal options. Then to ensure that the SA was comprehensive, the spatial implications of the various options were considered. These allowed for the SA to identify **broadly** the potential impacts of working aggregates in the identified areas. The methodology which has been applied to the appraisal of the various sharp sand and gravel apportionment options is set out at Chapter 2 of the July 2011 report. This same methodology has been applied in this addendum report in order to consider the two further apportionment options for sharp sand and gravel.

It should be noted that the MWCS will set out the overall strategy for the location of mineral workings in Oxfordshire. This will provide a basis for the identification of specific sites in the Minerals Sites Allocations Development Plan Document (DPD). A further, detailed SA assessment of the site nominations will take place when these specific sites are being considered in the Minerals Sites Allocations DPD.

Due to the strategic nature of the MWCS, which only identifies broad areas, it is not possible to address detailed site specific issues through the SA at this level. However, the SA has taken into account the available data and provided a robust strategic assessment of potential impacts associated with the various apportionment options. This approach follows the requirements in Article 5.2 of the SEA Directive which states that:

“The environmental report shall include information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, and its stage in the decision-making process”.

The sustainability appraisal is based on a combination of professional judgement, analysis of baseline data gathered in the Scoping Report and other available background information. It takes account of both potential positive and negative effects, and also considers other impact dimensions, including whether the effects are primary, secondary, direct, indirect, permanent,

¹ As required through the Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations).

short-term, medium-term, long-term or cumulative (the term cumulative effects is also used to describe synergistic and secondary effects).

The SA objectives that form the appraisal framework (including sub-objectives) are shown in the table below and are derived from the MWDF Scoping Report.

Table 1.3 the SA Framework

| SA Objective | Appraisal Criteria/Sub-objectives |
|--|--|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | Will the MWDF protect, maintain and enhance UK BAP Priority Habitats? Will the MWDF conserve and enhance internationally, nationally and regionally important sites of nature conservation importance? Will the MWDF protect, maintain and enhance UK BAP Priority Species? Will it contribute to the aims of the Conservation Target Areas? Will it protect and conserve geological SSSIs and RIGs? |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | Will the MWDF conserve and enhance Oxfordshire's AONBs & their settings and take into account guidelines associated with specific landscape types? Will the MWDF protect and enhance the historic and prehistoric environment of Oxfordshire? |
| 3. To maintain and improve ground and surface water quality | Will the MWDF affect groundwater quality? Will the MWDF affect surface water quality? Is the groundwater, surface water or both? |
| 4. To improve and maintain air quality to levels which do not damage natural systems | Will the MWDF lead to increased traffic congestion in built up areas? Will the MWDF lead to increased dust and/or odours? |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | Will the MWDF lead to a decrease in production of greenhouse gases such as methane? |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | Number of sites that are permitted within flood risk zone as identified by PPS25. |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | Will the MWDF reduce distances travelled by road? Are sites in the MWDF well located in relation to surrounding settlements for waste, or minerals for markets? Will the waste facilities or mineral operation serve local needs? Does the MWDF facilitate HGV routeing agreements and developer contributions for infrastructure improvements? |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | Will the MWDF have impacts which could have a harmful effect on human health? Will the MWDF result in loss of amenity through visual impact, noise, dust or vibration for local communities? Will the MWDF provide opportunities for enhancement of local amenity and access to the |

| SA Objective | Appraisal Criteria/Sub-objectives |
|---|--|
| | countryside? |
| 9. To protect, improve and where necessary restore land and soil quality | Will the MWDF affect high grade agricultural land? Will the MWDF lead to soil pollution or contamination? |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | Will the MWDF policies reduce the amount of waste produced? |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | Will the MWDF encourage the provision of more locally based skills and facilities? Will the MWDF generate new jobs for the county? Will the MWDF support and encourage the growth of small and medium size business? |

2 Sharp sand and Gravel

2.1 Options Considered and Methodology

For sharp sand and gravel, the Council identified areas that have the potential to provide deliverable sites during the plan period, and considered how these might meet three apportionment level options (1.01mtpa, 1.24mtpa and 1.46mtpa). These areas are shown in Table 2.1 together with the likely distribution of production rate per year for each area.

The existing areas of working (Lower Windrush Valley – LWV, Eynsham/Cassington/Yarnton - ECY- and Caversham) can potentially provide capacity throughout the period to 2030 and were therefore included in the three options considered in the 2011 apportionment SA report.

The Sutton Courtenay area is however only likely to be in production up to around 2020 and following this period additional areas would need to be identified to potentially provide further resources in the south of the county when reserves at Sutton Courtenay are exhausted. These areas are Cholsey, Clifton Hampden and Stadhampton. Under the higher apportionment options 2 and 3, these areas would be needed to provide additional resources before 2020, as shown in the table below. (*The figures shown in italics indicate where either (not both) of the areas could be worked*).

Table 2.1 Sharp sand and gravel apportionment options – potential production areas

| Options | LWV | ECY | Caversham | Sutton Courtenay | Cholsey | Clifton Hampden | Stadhampton |
|-----------------------|-----|------|-----------|------------------|---------|-----------------|-------------|
| Upto 2020 | | | | | | | |
| 1a² | 0.5 | 0.18 | 0.13 | 0.33 | x | x | X |
| 2 | 0.5 | 0.18 | 0.13 | 0.33 | 0.2 | x | X |
| 3 | 0.5 | 0.18 | 0.13 | 0.33 | 0.2 | <i>0.25</i> | <i>0.25</i> |
| 2020-2030 | | | | | | | |
| 1a | 0.5 | 0.18 | 0.13 | X | 0.2 | x | X |
| 2 | 0.5 | 0.18 | 0.13 | X | 0.2 | <i>0.25</i> | <i>0.25</i> |
| 3 | 0.5 | 0.18 | 0.13 | X | 0.2 | 0.25 | 0.25 |

The anticipated rates of production in Table 2.1 were based on rates of working under existing permissions or proposed rates of working in site nominations in these areas. For example, it was assumed in the 2011 SA report that 0.5 million tonnes sand and gravel will be produced annually from sites in the Lower Windrush Valley during the plan period, and that 0.33 million tonnes sand and gravel will be produced in the Sutton Courtenay area up to 2020.

During the consultation period in September 2011, concerns were raised by West Oxfordshire District Council that the SA had not considered the potential sustainability effects of *reducing* working in West Oxfordshire in the longer term (i.e. after 2020), and redistributing this supply

² This option has been labelled 1a for the purposes of this report, to distinguish it from the further 2 distribution options for this apportionment level, which are considered in this addendum report.

so that it is sourced from alternative sites, elsewhere in the County. (The West Oxfordshire preferred areas are those sites from the Lower Windrush Valley (LWV) and Eynsham/Cassington/Yarnton (ECY)). The Council raised concerns that the options considered in the 2011 SA report do not satisfy the objective to minimise the distance that minerals need to be transported and that the option of reducing the levels of extraction in West Oxfordshire (and drawing on other sites elsewhere in the county as a consequence) should also be considered.

The 3 options considered in the 2011 report are based on adding new areas in South Oxfordshire (Cholsey, Clifton Hampden, Stadhampton) as the apportionment increases, but maintaining the level of working in West Oxfordshire. Because of the current permissions in West Oxfordshire, reducing the working in this area before 2020 is not a viable option; as there are extant permissions until this time.

However to address this consultee’s concerns, this addendum report considers two additional options for meeting the preferred apportionment level post 2020, which consider the effect of reducing working in West Oxfordshire after 2020. These two options are both based on the assumption that pre-2020, the apportionment would be drawn from the same areas as Option 1 from the July 2011 report (on the basis that this option has since been chosen as the preferred apportionment level (1.01mtpa) in Policy M2). However post 2020, there are two possible spatial options for reducing the level of working in West Oxfordshire. Option 1b would result in reducing working in the LWV (0.25 mtpa) and ECY (0.18 mtpa), with the difference made up from sites from Cholsey, Clifton Hampden and Stadhampton. Option 1c would result in a reduced level of working in LWV (0.43mtpa), a cessation of working in ECY altogether (0.0mtpa), with the difference made up from sites in Cholsey, Clifton Hampden and Stadhampton. Options 1b and 1c are set out in Table 2.2 below.

Table 2.2: Further options for delivering an apportionment level of 1.01mtpa, based on a reduction in working in West Oxfordshire post 2020

| Options | LWV | ECY | Caversham | Sutton Courtenay | Cholsey | Clifton Hampden | Stadhampton |
|------------------|------|------|-----------|------------------|---------|-----------------|-------------|
| Upto 2020 | | | | | | | |
| 1b and 1c | 0.5 | 0.18 | 0.13 | 0.33 | x | x | x |
| 2020-2030 | | | | | | | |
| 1a | 0.25 | 0.18 | 0.13 | x | 0.2 | <i>0.25</i> | <i>0.25</i> |
| 1b | 0.43 | 0 | 0.13 | x | 0.2 | <i>0.25</i> | <i>0.25</i> |

(The figures shown in italics indicate where either (not both) of the areas could be worked).

When testing the sustainability implications of the various options for provision for sharp sand and gravel, the following methodology was applied:

- Strategic natural and built environment designations were mapped for each broad area to identify potential constraints associated with working each area. These were based on the issues covered by the SA objectives (as identified in the MWDF Scoping Report) and include – nature conservation designations, landscape designations, archaeological and

built heritage designations, groundwater and rivers. In addition, the road and rail networks and nearby settlements were also mapped (maps are provided in Appendix 1).

- The SA also took into account other sustainability issues covered by the SA framework including potential impact on greenhouse gas emissions, potential impacts on quality of life and human health, restoration opportunities and impacts on the local economy.

2.2 Sustainability Appraisal of Broad Areas

The sections that follow provide an overview of potential impacts associated with working in each of the identified areas based on the application of the above methodology:

LWV – This is an existing area for sand and gravel extraction situated in West Oxfordshire. This area has been extensively modified by mineral extraction for more than 60 years and is expected to continue to be in production during the plan period. Environmental designations identified within this area include a site of Scientific Special Interest (SSSI) and Scheduled Ancient Monuments. The River Windrush flows through the area and low flow has been identified as an issue by the Environment Agency. To mitigate against adverse effects associated with the identified issues, further assessment of potential impacts including mitigation measures where relevant should be undertaken at the site selection and planning application stages.

Some parts of the broad area lie within flood zone level 3b, and although sand and gravel extraction is considered to be compatible development in the flood plain, mitigation measures should be put in place to minimise the risk of flooding. Infrastructure associated with sand and gravel extraction should however not be located within the functional flood plain.

The area is accessed via the A415 leading onto the A40. The A40 is identified as suffering congestion in the MWDF Scoping Report. Maintaining working at the same level as current works can mitigate against further increases in HGV traffic in these area. However, HGV traffic would still have some negative effects in terms of green house gas (GHG) emissions, air and noise pollution.

This area is close to existing markets for sharp sand and gravel and has the advantage of having existing infrastructure to support extension of sites. Working in this area also offers potential restoration benefits for the surrounding communities through provision of nature conservation and recreational opportunities. There are several Conservation Target Areas (CTA) in the Lower Windrush Valley, and the area offers an opportunity for mineral restoration to contribute to landscape scale creation of UK Biodiversity Action Plan priority habitats³.

As stated before, there has been extensive working in the past in this area. This has had significant impact on the local landscape and on traffic. Continued working in this area is therefore likely to lead to negative cumulative impacts on the surrounding communities including visual and landscape impacts, traffic (including air and noise pollution) and GHG emissions associated with road transportation.

Summary:

- Potential for negative impacts on nature conservation and heritage designations (depending on the location of sites).
- Potential impacts on River Windrush
- Potential risk of flooding

³ <http://www.oncf.org.uk/biodiversity/cta.html>

- Transport impacts (air and noise pollution).
- GHG emissions.
- Positive economic and restoration impacts.
- Overall negative cumulative impacts on amenity in the long term (visual, landscape, traffic, noise and air quality).

ECY – The Eynsham/Cassington/Yarnton sand and gravel extraction area is an existing area of mineral extraction. To the south of the area are some environmental designations including a Special Area of Conservation and a SSSI. The River Evenlode and the River Thames also flow through the area. Potential adverse effects on these receptors will need to be considered at the site selection and planning application stages and mitigation measures provided where appropriate. Although sand and gravel extraction is considered to be compatible development in the flood plain, mitigation measures should be put in place to minimise the risk of flooding (and associated infrastructure should be located outside of the high flood risk areas). Ground water issues have been identified in Cassington and future working in this area should take account of these issues to ensure that continued production does not lead to adverse effects.

Continued working in these areas will lead to traffic impacts on the A40 and the A44 (the A40 is noted as already experiencing congestion in the MWDF Scoping Report). The area does not offer potential for use of alternative transport to road and therefore there is no potential to mitigate against GHG emissions. Continuing working in this area could have some economic benefits as the area is close to existing markets and existing infrastructure can be used to support further working and restoration offers potential for recreational benefits for the local communities.

Continued working however has potential for negative cumulative impacts over time including on the local environment (landscape, ground water) as well as on the local communities for example through traffic congestion especially around Cassington where there has been intensive working in the past.

Summary

- Potential negative impacts on SSSI, SAC and River Evenlode/River Thames depending on the location of sites.
- Transport impacts on the A40 and A44.
- GHG emissions.
- Positive economic and restoration impacts.
- Overall negative cumulative effects on environment and local communities in the long term (visual and landscape, ground water, traffic).

Caversham – This area lies to the south of the County at the border with Reading and is an existing mineral working area. There are no constraining nature conservation designations in the area. However, a large part of the area is underlain by a major aquifer and River Thames flows through the area. Potential negative effects on the aquifer and the River should be addressed during site selection and planning application stages. Large parts of the area lie within a high risk flood zone (3b), however, mineral working is compatible development and no significant effects are envisaged. Increased working has potential for negative effects on the road network including on the B478 and the A4155. The area has no potential for use of alternative transport modes and therefore does not provide scope to mitigate against GHG emissions associated with road transportation. Working in this area has some beneficial effects

in terms of using existing infrastructure and is well located close to markets in Reading. Restoration of sites could offer some beneficial community effects in the future depending on the proposed after uses.

Working in this area however has potential for cumulative negative effects including on the water environment, visual and local landscape, noise and transport in the long term.

Summary

- Potential impacts on ground water and River Thames.
- Transport impacts on the B478 and A4155 (congestion, air and noise pollution).
- GHG emissions.
- Economic and restoration benefits arising from proposed after uses.
- Potential for negative cumulative effects (visual and landscape, water, transport, air quality and noise).

Sutton Courtenay - This area lies to the south east of Oxfordshire and is an existing area for site and gravel extraction. The area is largely unconstrained by strategic nature conservation designations although there is a Scheduled Monument to the south west of the area. The River Thames flows through the area to the north and some parts of the area lie within high flood risk zone 3b. The area is well located in close proximity to markets with a good road infrastructure. However, potential transport impacts on the road network should be considered especially on the B401. Transporting materials by road also leads to GHG emissions. There is an aggregates rail depot and siding close to the current area of extraction, although at present this is used to import aggregates for onward sale rather than to export them. Working in this area offers some economic benefits as it is close to markets and has existing infrastructure. There is also potential for restoration benefits for the local communities. The area is proposed to be worked up to 2020. Potential negative cumulative effects (traffic, landscape and visual) would be in the short/medium term and reduce post 2020.

Summary:

- Potential impacts on scheduled ancient monuments and River Thames depending on location of sites.
- Economic and restoration benefits.
- Transport impacts on the B4016.
- GHG emissions.
- Potential negative cumulative effects (visual, landscape and transport) in the short-medium term (to 2020).
- **Cholsey** – This area is in South Oxfordshire District, south of Wallingford. It is largely unconstrained by strategic nature conservation, historic and landscape designations although the archaeological recommendation is that further investigation should take place when extraction is proposed in this area⁴. The River Thames flows through the area and potential negative effects on the River should be considered during site selection and planning application stages. This area is well located in relation to markets (Oxford, Didcot and Wantage). Infrastructure improvements would be required to support working in this area as it is not an existing minerals extraction area. The area is well linked with good

⁴ See the Minerals Preferred Strategy Annex 2: Preliminary Site Assessment

access to the lorry route network (A329 and A4074). However, moving materials by road has potential for negative transport impacts (air, noise and congestion) as well as GHG emissions, particularly around the local road network between Cholsey, Wallingford and Didcot. A historic railway line which uses steam and diesel trains lies adjacent to the area but is unlikely to be of use to transport aggregates. Introducing mineral working in this area could have potential for negative amenity effects on the local community through dust, noise and disruption and adverse visual effects, depending on the mitigation measures put in place, proximity to sensitive receptors and the duration of working.

Potential amenity impacts should be adequately addressed before commencement of works to ensure there are no adverse effects on sensitive receptors. This includes the potential for adverse effects on community recreational assets such as the Cholsey and Wallingford Steam Railway and Agatha Christie trail and potential development of the Wallingford to Cholsey cycle path. Restoration of sites could offer some beneficial community effects in the future depending on the proposed after uses.

Summary

- Potential impacts on the River Thames.
- Well located close to markets.
- Significant investment in infrastructure required.
- Potential transport impacts on the A4130 and A4074.
- Potential negative amenity effects on local communities and recreational assets.
- Potential restoration benefits in the longer term depending on proposed future land uses.

Clifton Hampden - Clifton Hampden lies to the east of Abingdon in South Oxfordshire. This area is largely unconstrained by presence of strategic designations. The area is well located close to the markets (Oxford, Didcot, Wantage, and Grove) but significant investment in infrastructure would be required as this area is not an existing mineral working area. Access is likely to be via the A415 on to the A4074 and although these are suitable for HGVs, there is potential for negative transport impacts (air and noise pollution, congestion) as HGVs would either have to travel through Clifton Hampden village, or Abingdon town centre, or go over the bridge over the Thames and go through Sutton Courtenay village. The railway line passes adjacent to the area but there is unlikely to be an opportunity to use it to transport aggregates. Introducing mineral working in this area has potential for negative amenity effects on the local community depending on the proximity of sites to sensitive receptors (houses, schools etc). Potential amenity impacts should be adequately addressed before commencement of works to ensure there are no adverse effects on sensitive receptors. Restoration of sites could offer some beneficial community effects in the future; restoration proposals include agriculture, lakes and habitat creation. .

Summary

- Well located close to markets.
- Significant investment in infrastructure required.
- Potential transport impacts on the A415 and A4074.
- Potential negative amenity effects on local communities (traffic, visual, air quality and noise) depending on location of sites.
- Potential restoration benefits in the longer term depending on proposed future land uses.

Stadhampton - This area is in South Oxfordshire District, north of Wallingford. It is largely unconstrained by strategic nature conservation and landscape designations. The River Thames flows through the site and potential negative effects on the river should be considered during site selection and planning stages to mitigate against likely adverse effects. The area is well located close to markets – Oxford, Didcot and Wallingford but significant investment in infrastructure would be required as this area is not an existing mineral working area. Access is likely to be via a haul road on to the A4074 with potential for negative transport impacts (air and noise pollution, congestion) as well as GHG emissions. This area is further from areas of planned development such as Didcot than the Cholsey area; lorries would have to use the A4074, the Wallingford bypass and the A4130 to reach Didcot. Introducing mineral working in this area has potential for negative amenity effects on the local community depending on the proximity of sites to sensitive receptors (houses, schools etc). These impacts should be adequately addressed before commencement of works to ensure there are no adverse effects on sensitive receptors. Restoration of sites could offer some beneficial community effects in the future depending on the proposed after uses.

Summary

- Well located close to markets
- Significant investment in infrastructure required
- Potential transport impacts on the A4074
- Potential negative amenity effects on local communities
- Potential restoration benefits in the longer term depending on proposed future land uses

2.3 Sustainability Appraisal of Options

This section summarises the potential impacts associated with each of the new sharp sand and gravel options, based on the issues identified in section 2.2 above. The appraisal from option 1a is included in this report, to enable a comparison with the alternative distribution options 1b and 1c.

2.3.1 Sharp Sand and Gravel Apportionment Option 1a

This option is based on working in the existing areas of LWV, ECY, Caversham and Sutton Courtenay. The Sutton Courtenay area is expected to cease production around 2020. The Cholsey area would be brought in to production post 2020 but working would continue at the same rate from the sites in west Oxfordshire. The table below shows the proposed annual distribution of working in the identified areas.

Table 2.3 Option 1a- Potential distribution of working at an apportionment level of 1.01mpta (mtpa)

| Option 1a | LWV | ECY | Caversham | Sutton Courtenay | Cholsey |
|------------------|-----|------|-----------|------------------|---------|
| Upto 2020 | 0.5 | 0.18 | 0.13 | 0.33 | x |
| 2020-2030 | 0.5 | 0.18 | 0.13 | x | 0.2 |

Sustainability Appraisal Summary

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC).

Landscape character – potential for local visual and landscape impacts in all areas depending on the location of sites. These impacts may reduce post 2020 in the Sutton Courtenay area in the longer term, as a result of cessation/reduced working in this area, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage – Potential for negative impacts in LWV and Sutton Courtenay due to presence of Scheduled Monuments and archaeological remains in the LWV.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Cholsey post 2020).

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Green house gases – GHG emissions in all the areas due to transportation of materials by road

Flood risk - All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECY), A 44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Communities - There is potential for continued negative amenity effects on communities in LWV, ECY, and Caversham throughout the plan period. There may be additional negative amenity effects on local communities near Cholsey and Clifton Hampden or Stadhampton post 2020. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although there may still be some negative amenity effects in the long term, until restoration schemes are established.

Local Economy – All the areas are well located close to the markets and providing investment and job opportunities which support the local economy. Significant investment in infrastructure would be needed in the Cholsey area, this could lead to local job creation and support to the local economy in this area.

Cumulative effects – Due to continued working in LWV, ECY, Caversham there is potential for long-term cumulative effects on the environment and on the local communities. These include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

2.3.2 Sharp Sand and Gravel Apportionment Option 1b

Option 1b is based on working in the existing areas of LWV, ECY, Caversham and Sutton Courtenay up to 2020. The Sutton Courtenay area is expected to cease production around 2020. The Cholsey and Clifton Hampden or Stadhampton areas would be brought in to production post 2020 and working in ECY would continue at similar rates. However working in LWV would be reduced, with production levels halved. The table below shows the proposed annual distribution of working in the identified areas.

Table 2.4 Option 1b - Potential distribution of working at an apportionment level of 1.01mtpa (mtpa)

| Option 1b | LWV | ECY | Caversham | Sutton Courtenay | Cholsey | Clifton Hampden | Stadhampton |
|-----------|------|------|-----------|------------------|---------|-----------------|-------------|
| Upto 2020 | 0.5 | 0.18 | 0.13 | 0.33 | x | x | x |
| 2020-2030 | 0.25 | 0.18 | 0.13 | x | 0.2 | <i>0.25</i> | <i>0.25</i> |

(The figures shown in italics indicate where either (not both) of the areas could be worked).

Sustainability Appraisal Summary

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC). These impacts may reduce post 2020 in the LWV as a result of reduced working in this area, depending on the location of the sites which cease operation and the implementation of appropriate restoration schemes.

Landscape character – potential for local visual and landscape impacts in all areas (when working commences/continues) depending on the location of sites. Sites in Cholsey are near to the AONB. These impacts may reduce post 2020 in the LWV and Sutton Courtenay areas in the longer term, as a result of cessation/reduced working in these areas, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage – Potential for negative impacts in LWV, Sutton Courtenay and Stadhampton (if site SG09 comes into operation) due to the presence of Scheduled Monuments and the archaeological assessments for site SG-09 (Stadhampton) and in the LWV.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Clifton Hampden or Stadhampton post 2020) and tributary to River Thames (Cholsey). Potential adverse impacts on ground water in LWV and the River Windrush would be expected to lessen with the reduction in

working in this area post 2020, and on groundwater and the River Thames with cessation of working of Sutton Courtenay. This is particularly positive in relation to the LWV, as low flow in the River Windrush has been identified as an issue by the Environment Agency.

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Green house gases – GHG emissions in all the areas due to transportation of materials by road

Flood risk – All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECV), A44 (ECV), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey and A415/A4074 (Clifton Hampden) or A329/A4074 (Stadhampton). Negative transport impacts on the A40 should reduce to some extent post 2020 with the reduction of working of sites in the LWV.

Restoration – LWV and ECV offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. There are also Conservation Target Areas in ECV (Oxford Meadows) Cholsey (Thames Wallingford to Goring) and Sutton Courtenay (link Thames Radley to Abingdon with Thames Clifton to Shillingford). Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Communities - There is potential for negative amenity effects on communities near Cholsey and Clifton Hampden or Stadhampton post 2020. Negative impacts on local communities in the LWV should reduce to some extent post 2020 as a result of the halving of production in this area post 2020 although there may still be some negative amenity effects until restoration schemes are established. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although again, there may still be some negative amenity effects in the long term until restoration schemes are established.

Local Economy – All the areas are well located close to the markets and provide investment and job opportunities which support the local economy. Significant investment in infrastructure in the Cholsey and Clifton Hampden or Stadhampton areas could lead to local job creation and support to the local economy in these areas. The Clifton Hampden and Cholsey areas would support growth in Dicot (Cholsey is also well located to the growth area of Wantage and Grove), Stadhampton could serve Oxford and Didcot to while the west Oxfordshire sites support growth in Oxford.

Cumulative effects – Due to continued working in LWV, ECV, Caversham there is potential for long-term cumulative effects on the environment and on the local communities in these areas, although these may reduce to some extent in the LWV as a result of the halving of production in this area post 2020. However cumulative adverse effects may start to be felt in South Oxfordshire post 2020 as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and

impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

2.3.3 Sharp Sand and Gravel Apportionment Option 1c

Option 1c is based on working in the existing areas of LWV, ECY, Caversham and Sutton Courtenay up to 2020. As stated above, the Sutton Courtenay area is expected to cease production around 2020. The Cholsey, Clifton Hampden and Stadhampton areas would be brought in to production post 2020. Working in ECY would cease altogether and working in the LWV would be reduced by 0.07mpta. The table below shows the proposed annual distribution of working in the identified areas.

Table 2.4: Option 1c - Potential distribution of working at an apportionment level of 1.01mpta (mpta)

| Option 1c | LWV | ECY | Caversham | Sutton Courtenay | Cholsey | Clifton Hampden | Stadhampton |
|-----------|------|------|-----------|------------------|---------|-----------------|-------------|
| Upto 2020 | 0.5 | 0.18 | 0.13 | 0.33 | x | x | x |
| 2020-2030 | 0.43 | 0 | 0.13 | x | 0.2 | <i>0.25</i> | <i>0.25</i> |

(The figures shown in italics indicate where either (not both) of the areas could be worked).

Sustainability Appraisal Summary

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC). These impacts may reduce post 2020 in the ECY as a result of cessation of working in this area, and reduce slightly in the LWV as a result of reduced working in this area, depending on the location of the sites which cease operation and the implementation of appropriate restoration schemes.

Landscape character – potential for local visual and landscape impacts in all areas (when working commences/continues) depending on the location of sites. Sites in Cholsey are near to the AONB. These impacts may reduce post 2020 in the ECY, LWV and Sutton Courtenay areas in the longer term, as a result of cessation/reduced working in these areas, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage – Potential for negative impacts in LWV, Sutton Courtenay and Stadhampton (if site SG09 comes into operation) due to the presence of Scheduled Monuments, the archaeological assessment for site SG-09 (Stadhampton) and archaeological remains in the LWV.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Clifton Hampden or Stadhampton post 2020) and tributary to River Thames (Cholsey). Potential adverse impacts on ground water in LWV and the River Windrush would be expected to lessen with the reduction in working in this area post 2020, and on groundwater and the River Thames with cessation of

working of Sutton Courtenay. This is particularly positive in relation to the LWV, as low flow in the River Windrush has been identified as an issue by the Environment Agency.

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Green house gases – GHG emissions in all the areas due to transportation of materials by road

Flood risk – All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECY), A44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey and A415/A4074 (Clifton Hampden) or A329/A4074 (Stadhampton). Negative transport impacts on the A40 should reduce to some extent post 2020 with the reduction of working of sites in the LWV.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. There are also Conservation Target Areas in EYC (Oxford Meadows) Cholsey (Thames Wallingford to Goring) and Sutton Courtenay (link Thames Radley to Abingdon with Thames Clifton to Shillingford). Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Communities – There is potential for negative amenity effects on communities near Cholsey and Clifton Hampden or Stadhampton post 2020. Negative impacts on local communities in the LWV should reduce to some extent post 2020 as a result of the lowering of production in this area post 2020. Negative impacts on local communities in the ECY should cease post 2020, as a result of the cessation of working in this area, although there may still be some negative amenity effects until restoration schemes are established. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although again, there may still be some negative amenity effects in the long term until restoration schemes are established.

Local Economy – All the areas are well located close to the markets and provide investment and job opportunities which support the local economy. Significant investment in infrastructure in the Cholsey and Clifton Hampden or Stadhampton areas could lead to local job creation and support to the local economy in these areas. The Clifton Hampden and Cholsey areas would support growth in Dicot (Cholsey is also well located to the growth area of Wantage and Grove), Stadhampton could serve Oxford and Didcot to while the west Oxfordshire sites support growth in Oxford.

Cumulative effects – Due to continued working in LWV, ECY and Caversham there is potential for long-term cumulative effects on the environment and on the local communities in these areas, although these may reduce to some extent in the LWV as a result of the halving of production in this area post 2020. However cumulative adverse effects may start to be felt in South Oxfordshire post 2020 as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and

impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

2.3.4 Summary of Findings

Nature conservation - The three areas in south Oxfordshire are largely unconstrained by strategic nature conservations, so a shift towards working these areas would reduce negative impacts on strategic nature conservations in west Oxfordshire (so options 1b and 1c would have less negative impacts than option 1a in this respect). There are extensive Conservation Target Areas within the Lower Windrush Valley so a reduction of working in these areas and the commencement of restoration programmes under options 1b and 1c could also assist to reduce negative impacts post 2020, by bringing forward this restoration earlier than option 1a.

Landscape character – None of the potential sites in these areas are directly in or adjacent to the AONB, although sites in Cholsey are near to the AONB. However there are potential for local visual and landscape character impacts in all areas (when working commences/continues) depending on the location of sites, so all options have potential adverse effects. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, more adverse sustainability impacts on local landscape character in the longer term across the county, compared to options 1a and 1c.

Historic and built heritage – There are scheduled ancient monuments and significant archaeological remains in the LWV and scheduled ancient monuments in the Sutton Courtney area. Reduction of working in the LWV under options 1b and 1c would therefore be likely to have less significant adverse effects with respect to this SA objective than option 1a.

Ground and surface water - Option 1b would have the least negative impacts on this SA objective in terms of reducing impacts on flow in the River Windrush, which is identified as an issue by the Environment Agency.

Air quality – There is potential for air pollution associated with HGV movements in all the areas and all three options. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, greater adverse impacts on air quality across the county in the longer term compared to options 1a and 1c.

Green house gases – GHG emissions in all the areas due to transportation of materials by road and thus all options will have an adverse impact.

Flood risk - All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, more adverse sustainability impacts in terms of flood risk (as more local areas will be affected across the county) in the longer term compared to options 1a and 1c.

Transport - There may be negative cumulative impacts on road safety, congestion and road maintenance under all three options. A reduction of working in the LWV and ECY under options 1b and 1c would reduce congestion on the A40, which would have a positive impact. However if HGV vehicles from the Cholsey, Stadhampton and Clifton Hampden sites were

using the road network around the growth areas of Oxford, Dicot and Wantage and Grove negative impacts may be concentrated in south Oxfordshire.

Restoration - Much of the sand and gravel resource in Oxfordshire is located along the Thames, Lower Evenlode and Lower Windrush river valleys, where Conservation Target Areas (CTA) have been identified. There are CTAs in all of the identified mineral working areas, with the exception of Clifton Hampden and Stadhampton. This presents an opportunity for sand and gravel quarry restoration to contribute to linking and developing the habitats in these conservation target areas. In this respect, options 1b and 1c offer the most beneficial impacts in terms of bringing this restoration work forward, post 2020.

Local Communities - Under all three options two areas in south Oxfordshire would be identified to meet the required apportionment. This will have a negative local impact on the local communities in these areas, especially as all three of the potential areas are not currently subject to mineral working. The social impact of increasing the number of sites is generally to increase the number of local communities across the county which are affected by sand and gravel working. This is likely to lead to a negative impact on local amenity, road safety, noise, dust and visual impact of working for these communities. Option 1b is therefore likely to have more significant adverse effects on local communities than options 1a or 1c. Each of the options will have a slightly different distribution of impacts in terms of the communities that are affected. Options 1b and 1c would see a reduction in working in west Oxfordshire, reducing the cumulative impacts in this area where communities have been subjected to extensive working over a long period of time.

Local Economy - The economic impacts of redistributing the provision for sand and gravel away from west Oxfordshire (options 1b and 1c) may have a localised negative impact on jobs generated by the sand and gravel industry in west Oxfordshire, shifting the positive impacts of these jobs and economic activity towards south Oxfordshire. New sources of supply in south Oxfordshire, nearer to planned development in the south of the county would have a positive economic impact.

Cumulative effects - Due to continued working in LWV, ECY and Caversham there is potential for long-term cumulative effects on the environment and local communities in these areas up to 2020 and beyond under option 1a. However under options 1b and 1c negative cumulative impacts in west Oxfordshire would be expected to reduce post 2020, but may start to be felt in South Oxfordshire, as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In all three options, cumulative effects would be felt in the short-medium term (to 2020) in Sutton Courtenay, after which production is planned to cease in this area.

3 Conclusion

In the early part of the plan period, all options would include working in the existing areas of LWV, ECY, Caversham and Sutton Courtenay. All three options would introduce working in Cholsey and either Clifton Hampden or Stadhampton post 2020, following closure of works at Sutton Courtenay. Under option 1a, working in west Oxfordshire would continue at the same rates post 2020, while under option 1b, working in the LWV would halve, and under option 1c, even less working would occur in the west Oxfordshire area, with cessation of working in the ECY and a reduction of 0.07mtpa in the LWV.

All three options have potential for adverse impacts on the environment as well as on the surrounding communities. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, more adverse sustainability impacts in the longer term across the county compared to options 1a and 1c.

Under all three options two areas in south Oxfordshire would be identified to meet the required apportionment. This will have a negative local impact on the local environment and local communities in these areas, especially as all three of the potential areas are not currently subject to mineral working. There may also be negative cumulative impacts on road safety, congestion and road maintenance if HGV vehicles from the Cholsey, Stadhampton and Clifton Hampden sites were using the road network around the growth areas of Oxford, Dicot and Wantage and Grove. However this must be compared against the positive effects on local communities and the environment in the western part of the county, of rebalancing some of the supply towards the south. Minerals from the south Oxfordshire sites would offer supply solutions that would be closer to markets (and potential growth areas) in the south of the county, thus reducing the mineral miles travelled from west Oxfordshire sites and the attendant environmental impacts. Reducing working in west Oxfordshire would reduce the cumulative impacts in this area where the environment and local communities have been subjected to extensive working over a long period of time.

The economic impacts of redistributing the provision for sand and gravel away from west Oxfordshire may have a localised negative impact on jobs generated by the sand and gravel industry in west Oxfordshire, shifting the positive impacts of these jobs and economic activity towards south Oxfordshire. However the construction of the substantial new infrastructure required to service sites in Cholsey, Stadhampton and Clifton Hampden provide an opportunity to generate significant new jobs and economic activity, and new sources of supply in south Oxfordshire, nearer to planned development in the south of the county which would have a positive economic impact.

Appendix 1 Sharp Sand and Gravel Maps







