

Minerals Strategy Principles

Generation of Principles

Following discussion with the Minerals and Waste Stakeholder Forum and the Minerals and Waste Plan Working Group, an initial set of aims and objectives for the Minerals and Waste Development Framework were included in the Minerals and Waste Issues and Options Consultation Paper, June 2006. After further consideration by the Forum and the Working Group, revised aims and objectives were included in the Minerals and Waste Core Strategy Preferred Options Consultation Paper, February 2007.

Responses to the preferred options consultation were considered by the Working Group and further revisions were made to the vision and objectives for the Core Strategy. These were included in the Minerals and Waste Development Framework Sustainability Appraisal Scoping Report, July 2009, as a draft set of core strategy objectives. The following principles are based on those aims and objectives.

Principles

- a) Ensure the supply of locally won sand and gravel, soft sand, crushed rock and secondary and recycled aggregates supports economic activity;
- b) Ensure the supply of minerals is economically efficient whilst minimising the environmental impact;
- c) Maximise the use of secondary and recycled aggregates in place of primary aggregates, and safeguard facilities for their production;
- d) Minimise the distance minerals are transported by road and encourage the movement of aggregates by conveyor, rail and water, and safeguard facilities for moving aggregates by rail or water;
- e) Secure high quality restoration of mineral workings to nature conservation, agriculture, or other appropriate use, and increase biodiversity and habitat creation and provision for local access and recreational use;
- f) Protect areas or sites of landscape, ecological, geological and heritage importance from adverse impacts;
- g) Minimise the adverse impact of mineral extraction and transportation on local communities, and secure local benefits through mineral working and restoration;

- h) Prevent the unnecessary sterilisation of Oxfordshire's sand and gravel, soft sand, crushed rock and fuller's earth resources by other forms of development.

October 2010

Consultation on Spatial Strategy Options for Mineral Working

Initial Minerals Strategy Options

Following discussions with the Minerals and Waste Plan Working Group during 2009, an initial set of spatial strategy options for mineral working was drawn up for focused consultation with key stakeholders. Consultation was carried out in February and March 2010. Independently facilitated workshop meetings were held with District and County Council members, groups of parish councils (3 area events, at Benson, Standlake and Stanford in the Vale), environmental groups and mineral operators. Technical and statutory bodies were also consulted. The responses to this consultation are summarised below.

Responses to February / March 2010 Consultation

Some general themes of the responses were:

- The options were not thought to be sufficiently distinct. Some options included the same areas as other options; this was particularly the case for the sand and gravel phased option (option 3).
- The areas covered by some options were thought to be too extensive and included areas thought unlikely to be economically viable to work or are constrained by national environmental designations.
- Stakeholders expressed concerns about the sand and gravel concentration strategy, particularly potential transport impacts, impacts on local communities and environment, and local acceptability.

Sand and Gravel Strategy Option 1a – Concentration of sand and gravel working to the west / north west of Oxford:

- a) The Environment Agency expressed concern about concentrating mineral extraction in this area, as it could have hydrological impacts particularly on the Lower Windrush Valley, where low river flow is a concern.
- b) The Highways Agency was concerned that a concentration strategy in this area could result in a potential increase in trip generation which could increase congestion at the Peartree junction on the A34.
- c) Natural England was concerned that this option included part of Oxford Meadows SAC and other SSSIs.
- d) The biodiversity group recognised that concentrating development in this area could offer the greatest opportunities for landscape scale restoration and to create joined up areas for nature conservation.
- e) Oxford Airport noted that birdstrike could potentially be a problem for aircraft, should this option be brought forward for mineral development.

- f) Parish Councils noted the cumulative impact of working on local communities and the lack of flexibility that the concentration strategy offered.

Sand and Gravel Strategy Option 1b – Concentration of sand and gravel working to the south / south east of Oxford:

- a) OCC transport officers noted issues of accessibility of some of this area to the strategic road network. The Highways Agency noted that this option could lead to an increase in mineral miles and that the impacts of mineral traffic on Marcham junction of the A34 would need to be assessed.
- b) Natural England expressed concern that this option includes Little Wittenham SAC and is in close proximity to Cothill Fen SAC. The setting of the North Wessex Downs AONB also needs to be taken into account.
- c) There are a number of archaeologically significant sites in this area which may pose a potential constraint to mineral extraction.
- d) The biodiversity group recognised that concentrating development in this area could offer opportunities for landscape scale restoration and to create joined up areas for nature conservation.

Sand and Gravel Strategy Option 1c – Concentration of sand and gravel working in both the areas identified in Options 1a and 1b:

- a) The same issues were identified as in Options 1a and 1b, but stakeholders recognised that the concentration would be less intense in either area.

Sand and Gravel Strategy Option 2 – Dispersal of sand and gravel working across resource areas which are close to markets:

- a) A truly dispersed option would encompass all potentially available resources and not be limited to areas close to markets.
- b) Some stakeholders thought this option would lead to many communities being affected by the impacts of mineral extraction. Some also thought that any decrease in current impact on communities caused by a dispersal strategy was unlikely to be in proportion to the principle of dispersal.
- c) Operators recognised the benefits of dispersing working to reduce impacts on any one area but thought that a dispersal strategy would give fewer opportunities for developer funding of highway and amenity and biodiversity improvements.
- d) The Environment Agency and the Highways Agency expressed a preference for a dispersed strategy to reduce the potential impacts of mineral working in any one area.
- e) The dispersal option was not favoured by the biodiversity group as it reduces the potential for landscape scale restoration from sites.

Sand and Gravel Strategy Option 3 – Phased approach with continued sand and gravel working from extensions to existing areas of working during the plan period and identification and planning of a new area or areas of working for beyond the plan period:

- a) Stakeholders commented that the strategy should only address the need for minerals during the plan period, not beyond it, and that in any case the issue of longer term provision is common to all options. But the minerals industry favoured long term planning for new sites.
- b) Stakeholders thought there was too much overlap with options 1b and 1c, with currently unworked resource areas to the south east of Oxford being included in both (and also in option 2).
- c) The Environment Agency preferred this option because it would enable strategic planning for ecologically viable habitat restoration and would reduce the concentrated impact of extraction on any one area.
- d) The Highways Agency expressed concern that this option still includes the area north and west of Oxford and therefore their concerns about the impacts of working in this area on the strategic road network remain.

Soft Sand Strategy Option – Sand working within a single extensive area in the south west of the county:

- a) The technical consultees had no major concerns about this option.
- b) Stakeholders noted that the area identified was very extensive and suggested that it could be made smaller.
- c) Stakeholders noted that the option did not take into account the soft sand resource in the North of the county.
- d) Stakeholders voiced concerns about the ability of local roads to cope with minerals lorries.

Crushed Rock Strategy Option – Crushed rock working within three areas: an extensive area between Bicester and Chipping Norton; the Burford area; and the soft sand strategy option area in the south west of the county:

- a) The technical consultees had no major concerns about this option other than the Highways Agency, which voiced concern about the potential impact of this option on the Peartree junction on the A34.
- b) Stakeholders noted that the area between Bicester and Chipping Norton was very extensive and suggested that it could be reduced in size, taking into account the location of workable resources.

Revised Minerals Strategy Options

The output from the February / March consultation was considered by the Working Group and revisions were made to the options. Further consultation was carried out on the revised set of spatial strategy options in July 2010. Two independently facilitated workshop meetings were held, at Benson and Standlake, and a workshop was held with mineral operators. Technical and statutory bodies were again consulted. The responses to this consultation are summarised below.

Responses to July Consultation

The main themes from responses at the workshops at Benson and Standlake were:

Sand and Gravel Strategy Option 1 – Continue working in existing areas:

- a) This option would take advantage of existing infrastructure and existing working arrangements.

[REDACTED]

[REDACTED]

[REDACTED] to existing sites, which could result in the use of long conveyors to move material back to plant for processing.

Sand and Gravel Strategy Option 2 – New areas of working:

- a) Relief for communities currently experiencing working.
- b) New workings may be more efficient than old workings.
- c) This option is likely to result in need for new and improved infrastructure and therefore represents an inefficient use of existing infrastructure.
- d) This option represents a higher risk to deliverability than the existing sites option.
- e) This option may lead to an increase in mineral miles between working and markets.
- f) Concern that there are many bridges over the River Thames in the new areas which are not capable of carrying mineral lorries and many roads which are not suitable for HGV traffic.
- g) Some of the new areas have extensive archaeological remains within them.
- h) Many of the new areas are in close proximity to airfields, raising concerns about safeguarding to prevent birdstrike.

Sand and Gravel Strategy Option 3 – Dispersed pattern of working:

- a) This option would lead to disadvantages of scale; small operations with few opportunities to seek funding from operators for infrastructure improvements or high quality restoration.
- b) This option could lead to an increase in the number of sites for OCC to manage and monitor effectively.
- c) Lack of focus for infrastructure developments or planning.
- d) Will increase the number of areas affected by 'planning blight'.

Soft Sand Strategy Option:

- a) Common sense approach, based on existing areas of activity.
- b) Good transport links except in Marcham and Newbridge.
- c) Issue of archaeology at Marcham/Frilford.
- d) Potential issue of cumulative impact of development in this area if the reservoir goes ahead.

Crushed Rock Strategy Option:

- a) Advantages of basing the strategy on existing sites recognised, eg infrastructure in place.
- b) Advantages of combining soft sand and crushed rock extraction on the same sites recognised.
- c) Ardley; transport issues around Bicester and ancient woodland NW of Bicester.

In addition to the feedback received from the stakeholder workshops, separate responses were also received from PAGE, AGGROW, CPRE, Nuneham Courtenay Parish Council and 240 individuals.

Responses from Mineral Operators

Overall, mineral operators prefer a dispersed option which they note offers more flexibility and enables working to be located closer to markets. In summary, their responses were:

a) General Comments on All Options

The market is not constrained by county boundaries and there are some cross boundary movements of aggregates. This is especially the case when aggregates have been processed to make value-added products, which increases their value and the economic viability of them travelling longer distances.

The number and location of new areas proposed needs to consider the spatial picture of neighbouring counties and the associated impacts on supply in relation to any existing and/or future minerals operations close to Oxfordshire's county borders.

b) Crushed Rock Option

It may be preferable to have a mixture of both small and large facilities to make provision for crushed rock, and also to maintain an adequate provision of building stone for the historic built environment, over the plan period.

c) Sand and Gravel Option 1 – Continue working in existing areas

Concern was expressed that if option 1 concentrates development in a few, large sites, the strategy will be dependent on few operators.

It is more difficult to maintain supply from large production units because a large permitted reserve needs to be maintained.

It was also noted that there could potentially be difficulty in delivering sites within a concentration strategy, in the face of well organised, significant local opposition.

It was suggested that concentrating working around Oxford may not necessarily be the most efficient strategy to supply the market, as the Oxfordshire market is much more than just Oxford.

d) Sand and Gravel Option 2 – New areas of working

It was suggested that greater clarity is needed on the aims of this option to make it clear that existing sites will effectively be shut down when permissions expire and that new areas would be phased in.

There was broad support for this option in so far as it would move production closer to the demand centres. However, it was pointed out that more of the areas featured in this option lie further away from the primary road network and that access must be one of the most important criteria by which the options are assessed.

Option 2 was generally thought not to be deliverable in the shorter term. Operators also thought that concentration on new areas should focus on what is deliverable in the plan period, not beyond.

e) Sand and Gravel Option 3 – Dispersal pattern of working

Option 3 was considered to be more favourable than Option 2. A dispersed approach would allow a mix of existing and new working areas; it would relate well to markets; and it could be delivered within the required timescale.

There are advantages of concentrating working in a large number of small areas. It was noted that local communities often prefer the development of small sites, which will only have a life of a few years. However, the operators recognised the difficulty of ensuring that such sites do not subsequently apply for extensions, thereby extending their period of working and undermining the local community's goodwill towards them.

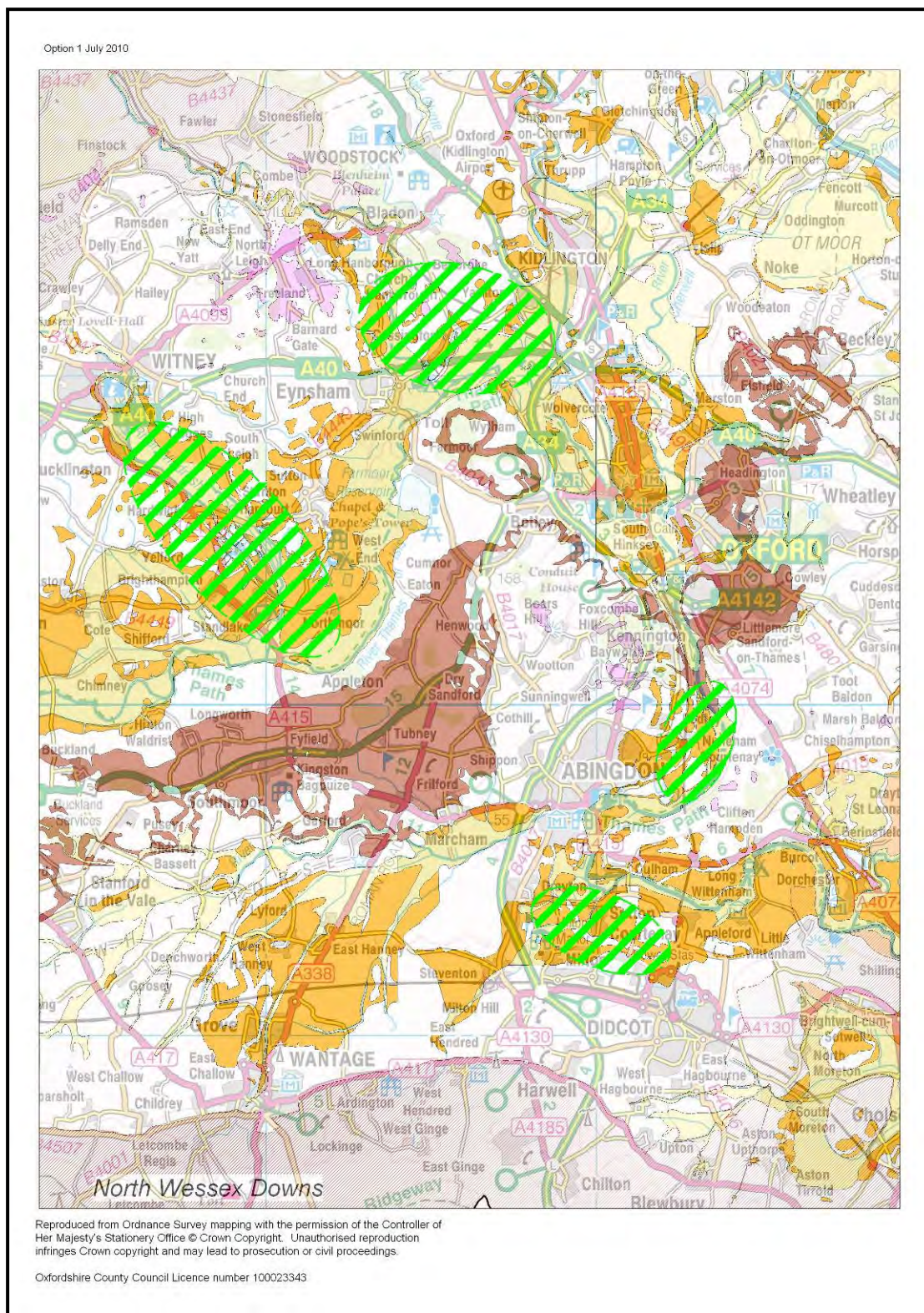
Land ownership issues can also make larger sites more difficult to deliver than smaller sites.

But operators noted that both options 2 and 3 could result in planning blight on several areas of the county, with continued uncertainty as to when mineral development may take place in those areas.

October 2010

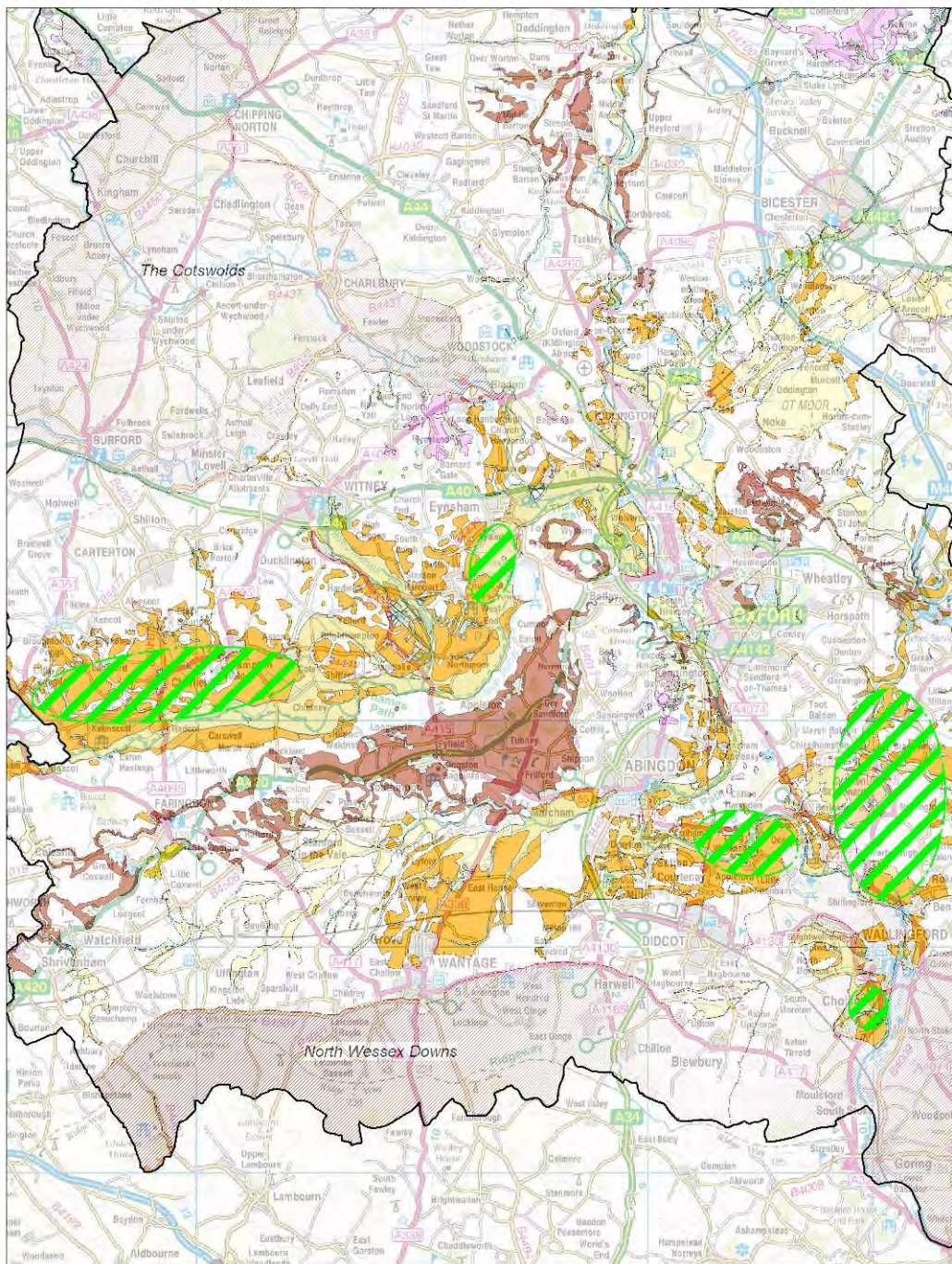
Maps of Revised Minerals Options July 2010

Sand and Gravel Option 1 – Existing Working Areas



Sand and Gravel Option 2 – New Working Areas

Option 2: concentration on new areas July 2010

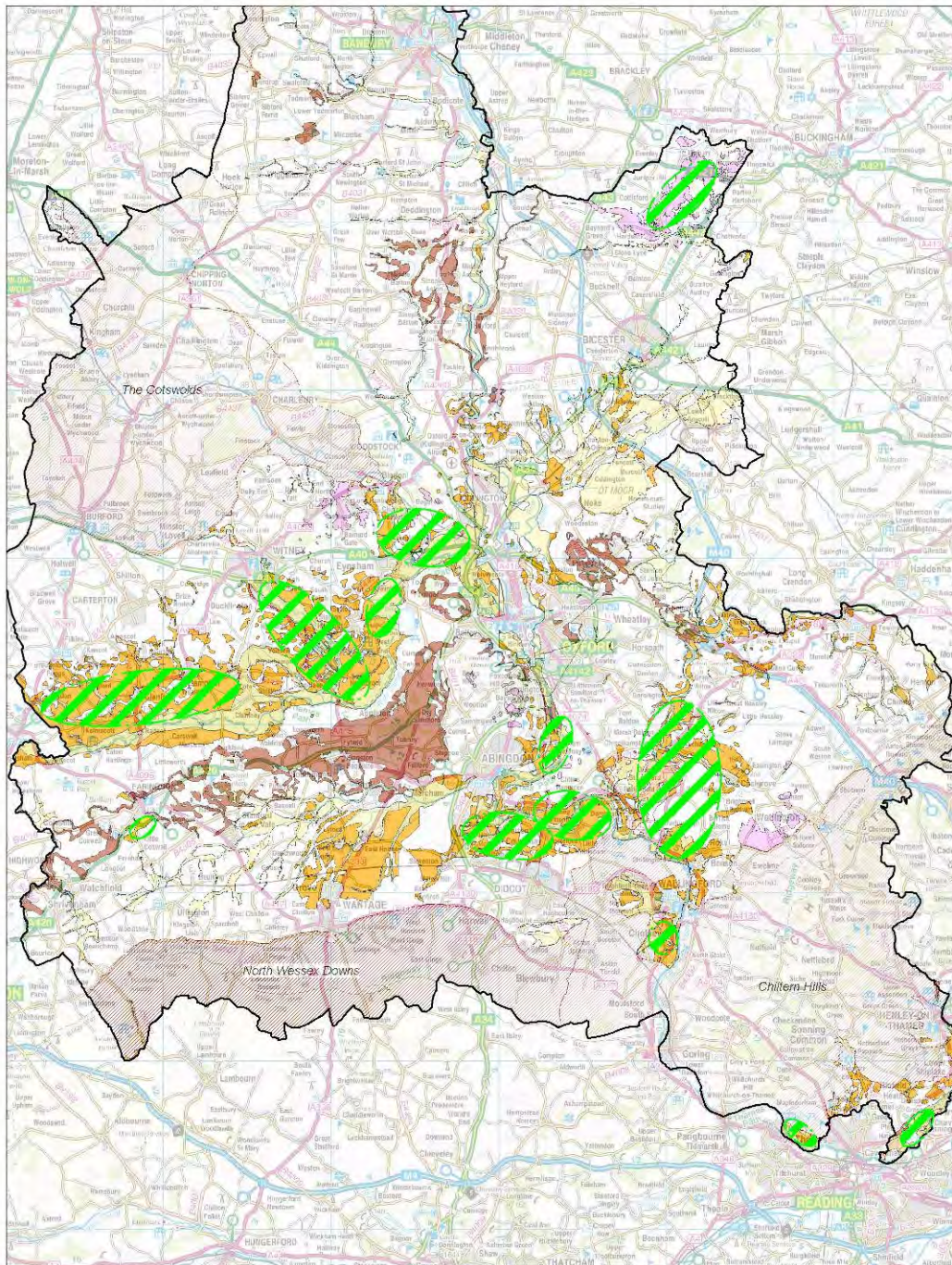


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Sand and Gravel Option 3 – Dispersed Working

Option 3: dispersed option July 2010

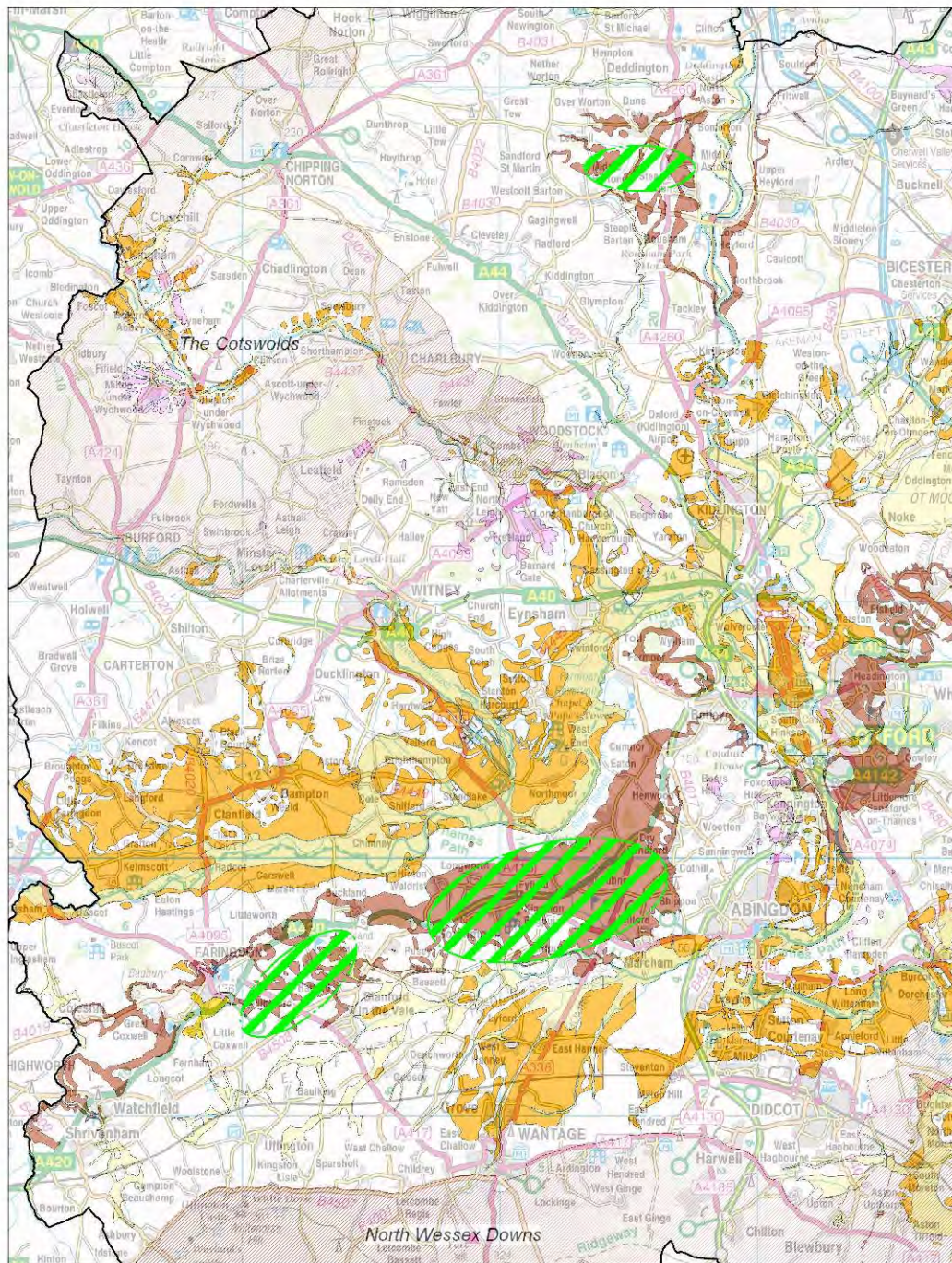


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Soft Sand Option

Soft sand option July 2010

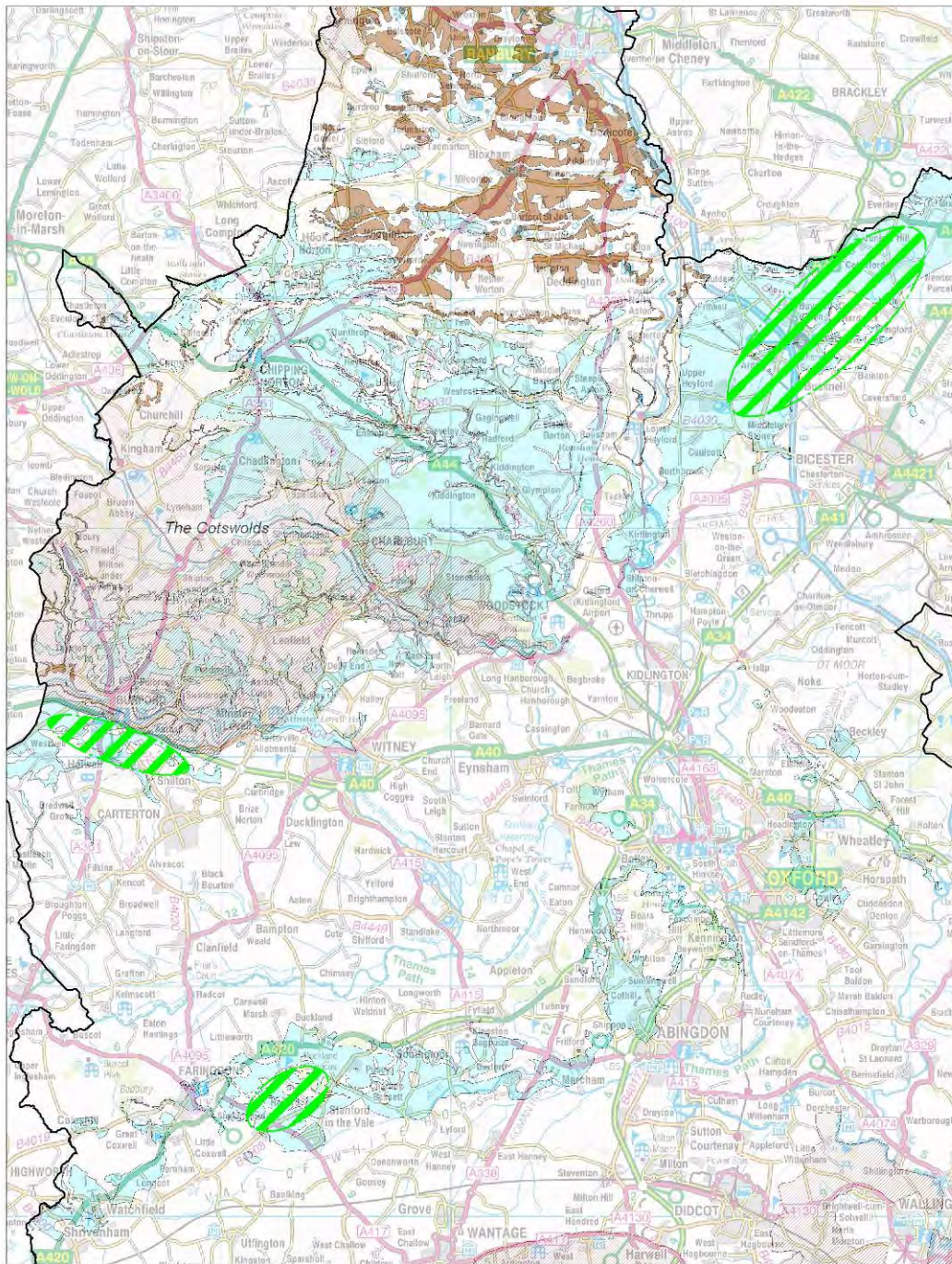


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Crushed Rock Option

Crushed Rock Option July 2010



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Technical Assessment of Minerals Options

Key to symbols used in assessment matrices	
Symbol	Likely impact of option on criteria
++	The option is likely to have a very positive impact
+	The option is likely to have a positive impact
0	No significant effect/no clear link
-	The option is likely to have a negative effect
--	The option is likely to have a very negative effect

A: TRANSPORT					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
ACCESSIBILITY & INFRASTRUCTURE	<p>+</p> <p>Good access from Lower Windrush Valley to the strategic lorry network (to A40 via A4095). Congestion on A40 at peak times. Good proximity of EYC area to A40 and A44, although these roads already have capacity issues at peak times. Access to Radley area is poor but</p>	<p>-</p> <p>The Clanfield/Bampton area has poor access to the major road and strategic lorry network. There are some weight restrictions on bridges over the Thames. Access from Sutton/Stanton Harcourt would need to use Eynsham bypass. Sites in the south of the Warborough/Benson area have better access than in the north of this area. However, the Cholsey area has good access</p>	<p>0</p> <p>Access is largely better to existing areas of working which have had infrastructure improvements than to proposed new areas of working. The Highways Agency notes that Option 3 would require infrastructure and facilities to be</p>	<p>+</p> <p>Good access for this area to A420 although number and type of HGVs may need to be controlled. The HA would wish to see evidence that soft sand extraction along the A420 would not adversely impact the safe and efficient operation of the</p>	<p>+</p> <p>Good access to A40 at Burford, A420 from Hatford and M40 from Ardley. The HA is concerned that the proposed level of rock extraction in the area north of Bicester and east of the River Cherwell will not compromise the safe and efficient operation of junction</p>

	possible from Nuneham Courtenay onto A4074. The Highways Agency favours extending existing sites in option 1 because existing facilities and infrastructure can be utilised. It wishes to see evidence that expanding operations in any of the areas identified in option 1 would not adversely affect the safe and efficient operation of the Peartree, Marcham and Milton interchanges.	to the A4130. The Highways Agency notes that Option 2 would require new infrastructure and facilities to be developed which may be difficult to justify and potentially problematic. The A4074 through the Warborough area passes through the villages of Shillingford & Nuneham Courtenay but is identified on the local lorry route.	developed which may be difficult to justify and potentially problematic. A number of the sites are small in option 3 and are located in areas difficult to access by HGV.	Botley interchange.	9 of the M40.
PROXIMITY TO MARKETS	+ EYC and Lower Windrush Valley in close proximity to markets in Oxford and Bicester. Sutton Courtenay in close proximity to growth area Didcot/Wantage/Grove.	0 The Clanfield/Bampton area is further from markets in central and south Oxfordshire than other areas. The Warborough/Shillingford/Benson area is closer to the central axis of demand but access is poor due to the constraints posed by the River Thames. The Cholsey area is close to Didcot. Good proximity from the eastern part of Radley area to S Oxford.	0 Dispersed pattern of working may reduce mineral miles although distance from areas to markets varies; some closer than others.	- Good access to markets in the west and north of the county. Less good to south of county.	- Good access to markets in the north and west of the county, less good for the south.
SAFETY OF ROAD USERS	- Need to divert lorries from Yarnton village;	- Proposed routes pass through small villages in	0 Dispersed pattern of working may reduce	- Concern from local residents about	0 Few issues with road safety for other

	access across railway line may be needed.	Clanfield/Bampton area. Proposed routes in Warborough/Shillingford area pass through Nuneham Courtenay & Shillingford. Cholsey and eastern Radley unlikely to impact on road safety of local communities.	the impact of traffic on some communities, but increase it for others.	safety of A417	users.
POTENTIAL TO USE RIVER/RAIL	- - No potential to use alternative forms of transport identified	- Potential problems raised over the ability of the R Thames to transport sand and gravel for W Oxfordshire; presence of pleasure craft, small locks, weak banks. The SA notes that the Cholsey and Radley areas could be served by rail link and that sites at Radley could use the River Thames to transport aggregate; however, the rail route at Cholsey does not link to the main network	- Option 3 identifies all the areas in option 1 and option 2, with the addition of Finmere, Caversham and Faringdon. Finmere and Faringdon do not have the potential to use alternative forms of transport. There could be potential to use the R Thames to transport aggregate from Caversham, but this has not been suggested by operators.	- - No potential to use alternative forms of transport identified	- - No potential to use alternative forms of transport identified

B: OPTION AREAS AND FLOOD ZONES						
Crushed Rock Areas		Fluvial flood zones (ha)				
	Total area of nominations	1	2	3a+cc	3a	3b
South of Burford						
CR-02	37.7	37.7	0	0	0	0
CR-07	25.7	25.7	0	0	0	0
CR-10	12.39	12.39	0	0	0	0
	75.79	75.79	0	0	0	0
E of R Cherwell/N of Bicester						
No nominations						
Hatford						
CR-06	13.57	13.57	0	0	0	0
CR-11	12.91	12.91	0	0	0	0
	26.48	26.48	0	0	0	0
Soft Sand Areas		Fluvial flood zones (ha)				
		1	2	3a+cc	3a	3b
Hatford/Shellingford						
SS-03	42.23	41.01	0	0	1.22	0
SS-07	38.79	38.79	0	0	0	0
SS-08	42.85	42.85	0	0	0	0
SS-09	126.8	126.8	0	0	0	0
SS-12	18.78	18.78	0	0	0	0
	269.45	268.23	0	0	1.22	0
Tubney/Hinton Waldrist/Marcham						
SS-01	26.66	25.67	0.08	0	0	0.91
SS-04	27.72	27.72	0	0	0	0
SS-05	31.24	31.24	0	0	0	0
SS-10	48.01	47.95	0.01	0	0	0.05
SS-11	74.66	71.75	0.59	0	0	2.31
	208.29	204.33	0.68	0	0	3.27
Duns Tew						
SS-06	5.94	5.94	0	0	0	0
	5.94	5.94	0	0	0	0
Sand and gravel areas		Fluvial flood zones (ha)				
		1	2	3a+cc	3a	3b
Lower Windrush Valley						
SG-14	44.36	0	2.13	0	0	42.23
SG-18	13.6	0	0	0	0	13.6
SG-21	45.4	44.22	0	0.95	0.23	0
SG-22	14.6	12.45	0	0	0.35	1.79
SG-23	25.2	18.79	0	0	4.49	1.92
SG-24	31.8	24.26	0.51	0.7	5.02	1.3
SG-27	52.3	45.19	0	0	2.56	4.55
SG-28	13.8	11.45	0	0	0.53	1.79
SG-30	54	51.28	0	2.69	0	0

CAT

SG-32	24.4	24.4	0	0	0	0	0
SG-34	23.2	8.19	0	2.9	8.3	3.8	
SG-36	33.68	33.68	0	0	0	0	
SG-39	166.05	11.76	0	13.82	7.95	132.52	
SG-50	379.3	0	0	11.7	2.2	365.4	
	921.69	285.67	2.64	32.76	31.63	568.9	
Eynsham/Cassington/Yarnton							
SG-04	7	1.69	0	5.1	0	0.2	
SG-05	9.3	0	0	0	0	9.3	
SG-08	215.4	145.61	0	1.29	0	68.49	
SG-16	32.8	2.59	0	11.7	0.99	17.5	
SG-20	170.9	2.03	0	4.01	0.99	163.89	
SG-20a	77.96	0	0	0	0	77.96	
SG-20b	39.94	0	3.71	0	0	36.23	
	553.28	151.92	3.71	22.1	1.98	373.57	
Radley							
SG-41	49.21	12.69	0.84	1.869	1.67	32.13	
SG-41a	94.31	57.72	12.07	1.89	1.89	20.75	
SG-42	87	22.88	15.57	8.53	5.92	34.1	
	231	93.29	28.48	12.289	9.48	86.98	
Sutton Courtenay							
SG-06	10.53	0	0	0	0	10.53	
SG-19	34.74	0	1.01	2.81	4.2	26.72	
SG-52	49.11	2.79	0.16	0	0.14	46.02	
SG-53	26.4	26.4	0	0	0	0	
SG-56	8.23	0.4	7.613	0	0.16	0.06	
SG-62	24.07	15.36	3.63	0	0	5.08	
	155.1	44.55	12.413	2.81	4.5	88.4	
Clanfield/Bampton							
SG-15	240.8	89.8	0	27.3	0.7	123	
SG-38	446.4	174.54	0	58.03	1.34	212.49	
SG-54a/b	799.8	101.46	46.23	0	0	652.11	
SG-55a/b	1343.9	191.9	0	243.3	0	908.7	
SG-58	128.9	112.01	0	10.18	0	6.7	
SG-58a	194.8	129.15	0	10.13	0	55.52	
TOTAL	3154.6	798.86	46.23	348.94	2.04	1958.52	
Warborough/Benson/Shillingford							
SG-03	4.08	0	0.061	0.07	0.21	3.74	
SG-09	167	86.51	32.23	0	0	48.26	
SG-13	220.4	108.66	87.49	0	0	24.24	
SG-48	254.1	131.64	18.63	0	0	103.83	
SG-49	544.21	533	10.41	0	0	0.8	
SG-59	65.95	27.83	2.7	0	0	35.42	
	1255.73	887.64	151.521	0.07	0.21	216.29	
Sutton/Stanton Harcourt							

CAT7

SG-29	142.9		49.3	9.57	1.14	0	82.88
SG-31	185.5		0	0	3.38	1.12	181.04
	328.43		49.3	9.57	4.52	1.12	263.92
Cholsey							
SG-33	67		51.19	14.07	0	0	1.74
SG-46	43.08		43.08	0	0	0	0
SG-57	12.4		7.86	1.99	0	0	2.54
SG-60	15.02		1.33	4.04	3.98	1.69	3.98
	137.5		103.46	20.1	3.98	1.69	8.26
Clifton Hampden/Wittenham							
SG-17	143.7		29.03	51.59	8.91	4.31	49.86
SG-44	509.4		166.78	133.4	37.37	46.51	125.34
SG-45	248.99		140.9	46.77	0	0.9	60.42
	902.09		336.71	231.76	46.28	51.72	235.62
Flinnere							
No nominations							
SG-12	51.19		0	1.23	0	4.35	45.61
	115.27		0	2.9	3.72	4.35	104.3
Faringdon							
SG-01	19.07		19.07	0	0	0	0
SG-02	14.72		14.72	0	0	0	0
	33.79		33.79	0	0	0	0

C: WATER ENVIRONMENT					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
IMPACT ON FLOOD ZONES	- Two thirds of the area of the sites identified in the Lower Windrush Valley lie within flood zones 2, 3a or 3b. A third of the area of the nominated sites is therefore in flood zone 1. Three quarters of the area of the sites identified in the Eynsham/Cassington/Yarnton area lie within flood zones 2-3b; a quarter of their area is in flood zone 1. Just over half of the area of sites identified in the Radley area falls within FZ 2-3b, just under half is in FZ1. Two thirds of the area of the sites nominated in the Sutton Courtenay area lie on FZ 2-3b, one third of the area in FZ1.	- Three quarters of the area of the sites nominated in the Clanfield/Bampton area lie within FZ 2-3b; one quarter of the area lies in FZ 1. Only one third of the areas of the sites nominated in the Warborough/Benson/Shillingford area lie in FZ 2-3b, one third lies in FZ 1. Eighty five per cent of the area of the sites at Sutton/Stanton Harcourt lie in FZ 2-3b, only 15% lies in FZ 1. One quarter of the area of the sites nominated in the Cholsey area lie in FZ 2-3b, three quarters in FZ 1. Two thirds of the area of the sites identified in the Clifton Hampden/Wittenham area lie in FZ 2-3b, one third in FZ 1.	- Option 3 identifies all the areas in option 1 and option 2, with the	+	+
				The areas identified in this option are almost completely in flood zone 1, with the exception of one very small area at Hatford which is in flood zone 3a, adjacent to a brook and the edge of two areas identified by OCC which are adjacent to Sandford Brook and one small area of a nomination at Tubney, adjacent to an unnamed brook, in flood zone 3b.	The areas identified in the crushed rock option lie entirely within flood zone 1.
GROUND WATER FLOWS	- The Environment Agency notes that concentrated mineral extraction can restrict groundwater flows.	0 No specific comments on the impacts of the new areas identified on ground water.	0 The Environment Agency prefers a dispersed pattern of working to disperse the impacts on ground water flows.	0 No comments on the soft sand option and groundwater	0 No comments on the crushed rock option and groundwater.
SURFACE WATER FLOWS	- -	-	0	0	0

CA7

	Restricting ground water flows can cause low surface water flows in rivers down gradient from the working. Low flows in the Lower Windrush Valley are of particular concern. The Evenlode and Thames rivers are not subject to low flows	Surface water flows in the Clanfield/Bampton area are complicated by expanded operations at RAF Brize Norton and by expansion of Carterton.	The Environment Agency prefers a dispersed pattern of working to disperse the impacts on surface water flows.	No comments on the soft sand option and groundwater	No comments on the soft sand option and groundwater
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D: BIODIVERSITY / LANDSCAPE / AGRICULTURE					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
IMPACT ON NATIONAL ENVIRONMENTAL DESIGNATIONS	- The Eynsham/Cassington Yarnton area includes parts of Oxford Meadows SAC, including the component SSSI Cassington Meadow and Pixey and Yarnton Meads. It appears that this option area still covers these sites. Detailed hydrological assessments would need to be carried out to ensure that there are no detrimental impacts.	0 No impacts of the new areas included in this option have been identified. There are few SSSIs and no SACs in the new working areas.	0 Option 3 identifies all the areas in option 1 and option 2, with the addition of Finmere, [REDACTED]	- Tubney/Marcham/Hinton Waldrist area of this option contains within it parts of Cothill Fen SAC. This site has a sensitive hydrological regime and assessments will need to be carried out to ensure that any mineral works in close proximity to the designated site will not have a detrimental effect upon it. The OCC ecology planner notes that Option 1 for sand and gravel and the soft sand option are both close to European sites (Oxford Meadows SAC and Cothill Fen SAC). Close consultation with Natural England will be required as to the level of assessment needed for the Minerals LDF if these options are taken forward. It is likely that further assessment by	0 The areas included in the crushed rock option are unlikely to have an impact on sites designated for their national environmental importance.

				OCC will be required, which may be time-consuming and expensive. An alternative would be to ensure that the boundaries of these option areas are sufficiently far away from the SACs to negate the need for detailed assessments by OCC at the Minerals LDF stage.	
IMPACT ON NATIONAL LANDSCAPE DESIGNATIONS	0 The existing working areas are not in close proximity to sites designated for their national landscape importance.	- The eastern extent of the Clifton Hampden/Wittenham area falls within the Chiltern Area of Outstanding Natural Beauty. The area at Cholsey could potentially affect the setting of the Chilterns AONB, as could the Warborough/Shillingford/Benson area.	0 Option 3 identifies all the areas in option 1 and option 2, with the addition of Finmere, [REDACTED]	0 The soft sand option is unlikely to have any impact on sites designated for their national landscape importance.	- OCC ecology planner notes that the area south of Burford is adjacent to the Cotswold AONB and could have an impact on its setting. Although option 2 for sand and gravel and the crushed rock option could both impact on AONBs, these impacts will be temporary, provided that the restoration scheme is appropriate to the area.
BEST AND MOST	0	-	-	0	0

VERSATILE AGRICULTURAL LAND	The existing areas of working are mostly on grades 2, 3 and 4 agricultural land	Some of the area around Warborough is Grade 1 agricultural land, which potentially constrains some of the available resource but other parts of the Warborough area and of the other areas lie in lower grade agricultural land. OCC ecology planner notes that provided BMV is safeguarded, it will not necessarily prevent minerals working. As long as the sub and topsoil is stored during extraction and then restored appropriately, the BMV will be safeguarded.		No impacts on BMV land identified	No impacts on BMV land identified
POTENTIAL FOR RESTORATION FOR HABITAT CREATION	++ Natural England encourages new working in existing areas. Option 1 is therefore a preferred option for Natural England from a potential for restoration perspective. The biodiversity group also notes that option 1 and 2 potentially offer the greatest opportunity for landscape scale restoration as they result in the most concentrated mineral workings and therefore	++ Natural England encourages new working in new strategic areas of extraction. Option 2 is therefore a preferred option for Natural England from a potential for restoration perspective. The biodiversity group also notes that option 1 and 2 potentially offer the greatest opportunity for landscape scale restoration as they result in the most concentrated mineral workings and therefore the opportunity to create joined up areas restored for nature conservation at a landscape scale. The LDF is an opportunity to achieve great biodiversity enhancement in	- Dispersing working may not enable strategic, planned restoration at a landscape scale.	0 Restoration is planned at the site level rather than at the strategic option level.	0 Restoration is planned at the site level rather than at the strategic option level.

	the opportunity to create joined up areas restored for nature conservation at a landscape scale.	Oxfordshire for wildlife and people and it would be a shame for this opportunity to be wasted.			
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E: ARCHAEOLOGY					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
SCHEDULED ANCIENT MONUMENTS	<p>0</p> <p>The Lower Windrush Valley, Radley and Sutton Courtenay each contains approximately three Scheduled Ancient Monuments and some other areas that are potentially of national importance, which should not be considered for extraction. EH notes that this is particularly the case south of Hardwick. However, these constraints should not preclude other parts of this area being considered for future extraction. In the Eynsham/Cassington/Yarnton area, there is a remnant of an Iron Age Fort. EH recommends that further assessment of this area be undertaken before it is included in the strategy. No specific constraints in the Radley area. EH notes the presence of extensive crop marks in the Sutton Courtenay area.</p>	<p>-</p> <p>A number of the areas identified in this option contain SAMs: Clanfield/Bampton has approx 11 (and extensive crop marks), Warborough/Shillingford /Benson has approx 7(EH notes presence of significant complexes in the south of this area around Dorchester), there are two in Sutton/Stanton Harcourt and three in Clifton Hampden/Wittenham. These do not preclude other parts of these areas being considered for extraction. There are no sites of archaeological significance in the Cholsey area.</p>	<p>-</p> <p>Option 3 identifies all the areas in option 1 and option 2, with the addition of Finmere, [REDACTED] and Faringdon. [REDACTED]</p>	<p>0</p> <p>The area south and east of Faringdon and the Tubney/Marcham/Hinton Waldrist area both have one SAM, which should not be considered for extraction but do not preclude development in other parts of these areas. There are no specific sites of national importance in the Duns Tew area.</p>	<p>0</p> <p>The area east of the River Cherwell/North of Bicester contains 4 SAMs and some other areas that are of potentially national importance. The area south and east of Faringdon contains one SAM. These constraints should not preclude development in other parts of these areas. There are no sites of national importance south of Burford.</p>
NATIONAL PARKS AND GARDENS	<p>-</p> <p>The setting of Nuneham Courtenay house and Sutton</p>	<p>-</p> <p>The setting of Fair Mile hospital, to the south of</p>	<p>-</p> <p>Option 3 identifies all the areas in option 1</p>	<p>-</p> <p>The setting of Hinton House needs to be</p>	<p>-</p> <p>The setting of Buckland and Pusey</p>

	Courtenay manor needs to be taken into account.	the Cholsey area, and Ascott House, east of Stadhampton need to be taken into account	and option 2, with the addition of Finmere, Caversham and Faringdon. There are no sites on the Register of Parks and Gardens in any of these three additional areas.	taken into account.	Houses need to be taken into account.
CROP MARK COMPLEXES	0 There are some cropmarks and others may be beneath the alluvium.	- There are a number of crop mark complexes in the Warborough/Shillingford, Clanfield/Bampton area which may be indicative of significant sites. Others may survive beneath alluvium.	0 As Options 1 & 2. Other archaeological sites may be present under the alluvium.	0	0

F: SAFEGUARDING					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
IMPACT ON MOD AIRFIELDS	- The MOD prefers Option 1 for sand and gravel. However, further clarification is required regarding proposed restoration. It proposes that in option 1, OCC should concentrate on the areas identified to the centre and east of the option area. All areas fall within safeguarding zones but this does not preclude development.	-- The MOD notes that the main 'show stopper' is the large area identified between Clanfield and Bampton, in the vicinity of RAF Brize Norton. The MOD is concerned with the cumulative impact of an expected wetland restoration in the vicinity of key military air bases, which have a negative effect on aviation. It is important that information regarding the restoration and after use is established as early as possible. All new areas have potential implications for birdstrike which need to be considered but do not preclude working.	-- The MOD notes that the main 'show stopper' is the large area identified between Clanfield and Bampton, in the vicinity of RAF Brize Norton. The MOD is concerned with the cumulative impact of an expected wetland restoration in the vicinity of key military air bases, which have a negative effect on aviation. It is important that information regarding the restoration and after use is established as early as possible.	0 The MOD does not have any concerns about the soft sand option.	0 The MOD does not have any concerns about the crushed rock option.
IMPACT ON CIVIL AIRFIELDS	-- Oxford Airport expressed concern about continued	0 No comment	0 No comment	0 No comment	0 No comment

	working in the Lower Windrush Valley, Stanton Harcourt and Eynsham/Cassington/Yarnton because of the attraction of birds and the possible presence of physical structures over 45m in height				
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G: IMPACT ON COMMUNITIES & ECONOMY					
Criteria	Sand and Gravel Option 1	Sand and Gravel Option 2	Sand and Gravel Option 3	Soft sand option	Crushed rock option
CUMMUNLATIVE IMPACT OF DEVELOPMENT	- Some areas of the Lower Windrush Valley and villages in the Sutton Courtenay area have experienced working for many years; the SA notes the cumulative impact of impacts on local communities especially with regard to traffic and amenity issues	- New areas of working will impact on communities which have not previously experienced mineral working, although in the SA, these are judged to be less significant than for communities which have experienced many years of working. The cumulative impact of new development may be increased in some areas where other forms of development are taking place, such as in W Oxfordshire where development is also taking place at Carterton and RAF Brize Norton	0 Dispersing working will spread the effects on communities more widely, lessening it for some areas but increasing it for others	0 Continued working in the existing areas could result in cumulative effects over time on the local communities including on landscape and local amenity – noise, air, dust and traffic impacts	0 Continued working in the existing areas could result in cumulative effects over time on the local communities including on landscape and local amenity – noise, air, dust and traffic impacts. However, it is envisaged that there will be no significant increase in working in any particular area (based on the information provided by the County Council), and so no significant negative cumulative effects are expected
LOCAL ECONOMY	0 Potential economic benefits of continuing existing working is likely to be marginal as many areas have already been restored for recreational use	0 The SA notes that there could be some positive economic benefits in terms of providing employment in the new areas of working. There is also potential to	0 The SA notes that there could be some positive economic benefits in terms of providing employment in the new areas of working. There is also potential to	0 The SA notes that this option allows the current pattern of extraction of two different quality sands to be continued which has a positive economic	0 No benefits or disbenefits of continuing the current pattern of extraction on the local economy are identified

CA7

		create recreational facilities which could enhance local tourism. However, local residents are concerned about the impacts of mineral working in W Oxfordshire on tourism	create recreational facilities which could enhance local tourism. However, local residents are concerned about the impacts of mineral working in W Oxfordshire on tourism	benefit. Continued extraction may also provide a limited amount of local employment	
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Issues Raised by Technical Assessment and Sustainability Appraisal of Sand and Gravel Options

Option 1 – Existing Working Areas

- a) The Radley area is close to Oxford; it has poor access to the west of the River Thames but could be accessed from the A4074 (a local lorry route) to the east of the river.
- b) There are limited sand and gravel resources remaining in the Sutton Courtenay area, and it could only make a strategic contribution to supply for a limited part of the plan period.
- c) The Lower Windrush Valley and the Eynsham/Cassington/Yarnton areas have plentiful resources and good access via the A40 to north Oxford and to Bicester, but are further from south Oxford, Didcot and Wantage and Grove. There has been a cumulative impact of mineral working and transportation on local communities, landscape and lorry traffic levels in these two areas. Oxford Meadows Special Area of Conservation poses a potential constraint to working the southern part of the Eynsham/Cassington/Yarnton area.

Option 2 – New Working Areas

- a) The Clanfield/Bampton area is poorly located relative to markets for aggregates and would require big improvements to infrastructure to enable large scale working without impacting on villages and local roads.
- b) The Sutton/Stanton Harcourt area has good access to the A40 via the Eynsham bypass. But working in this area could increase the cumulative impact of working in West Oxfordshire and on the A40.
- c) The Clifton Hampden part of the Clifton Hampden/Wittenham area is accessible by local lorry route (A415 and A4074) and has few environmental constraints, although there are some Scheduled Ancient Monuments (SAMs) and lorries would have to pass through Clifton Hampden and Burcot. An extensive SAM, the nearby Little Wittenham SAC and the adjoining North Wessex Downs AONB are major constraints on the Wittenham part of the area.
- d) The southern part of the Warborough/Benson/Shillingford area is constrained by the presence of SAMs and Grade 1 agricultural land, but the northern part has few environmental constraints and could be linked to the A4074 near Berinsfield.
- e) The Cholsey area has good access to the local lorry network and is near to Didcot. The proximity of the Chilterns and North Wessex Downs AONBs could constrain mineral working in parts of this area.

Option 3 – Dispersed Working

A dispersal strategy would not encourage effective and economic use of resources, would be likely to increase mineral miles and would not enable objectives for restoration and local benefits to be achieved effectively.

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Testing Minerals Options against a Range of Supply Requirements

A 19 year period is used, from the end 2008 (last published data on permitted reserves) to 2027, providing a 15 year Core Strategy period from expected adoption in 2012.

SHARP SAND AND GRAVEL	Average 5 year production 0.96 mtpa x 19 years = 18.24 million tonnes	Average 10 year production 1.23 mtpa x 19 years = 23.37 million tonnes	SEERA proposed figure 1.31 mtpa x 19 years = 24.89 million tonnes	CLG guidance figure 1.74 mtpa x 19 years = 33.06 million tonnes
Sand and gravel option 1				
- Permitted reserves	5,687,000	5,687,000	5,687,000	5,687,000
- Estimated yield of nominations	33, 291,000	33, 291,000	33, 291,000	33,291
TOTAL	38,978,000	38,978,000	38,978,000	38,978,000
Sand and gravel option 2				
- Permitted reserves	5,687,000	5,687,000	5,687,000	5,687,000
- Estimated yield of nominations	58,690,000	58,690,000	58,690,000	58,690,000
TOTAL	64,377,000	64,377,000	64,377,000	64,377,000
Sand and gravel option 3				
- Permitted reserves	5,687,000	5,687,000	5,687,000	5,687,000
- Estimated yield of nominations	96,681,000	96,681,000	96,681,000	96,681,000
TOTAL	102,368,000	102,368,000	102,368,000	102,368,000

SOFT SAND	Average 5 year production 0.19 mtpa x 19 years = 3.61 million tonnes	Average 10 year production 0.21 mtpa x 19 years = 3.99 million tonnes	SEERA proposed figure 0.27 mtpa x 19 years = 5.13 million tonnes	CLG guidance figure 0.36 mtpa x 19 years = 6.84 million tonnes
Soft sand option				
- Permitted reserves	1,231,000	1,231,000	1,231,000	1,231,000
- Estimated yield of nominations	10,900,000	10,900,000	10,900,000	10,900,000
TOTAL	12, 131,000	12, 131,000	12, 131,000	12, 131,000

CRUSHED ROCK	CLG guidance figure 0.66mtpa x 19 years = 12.54 million tonnes
Crushed rock option	
- Permitted reserves	12,592,000 tonnes
- Estimated yield of nominations	17,210,000 tonnes
TOTAL	29,802,000 tonnes

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MINERALS AND WASTE PLAN WORKING GROUP**Note of Meeting 27 September 2010**

Present: Members: Cllr Ian Hudspeth (Chair), Cllr Patrick Greene, Cllr Anne Purse. Cllr Charles Mathew (substitute), Cllr Lorraine Lindsey-Gale (substitute).
Observers: Cllr Melinda Tilley.
Officers: Martin Tugwell, Ian Walker, Peter Day, Lois Partridge.

- 1. Apologies for absence:** Cllr Peter Jones, Cllr George Reynolds.
- 2. Note of meeting on 28 June 2010 and matters arising**
 - 2.1 The note of the meeting on 28 June 2010 was agreed.
 - 2.2 Matters Arising**
 - 2.3 Cllr Mathew thought it was unsatisfactory that the June meeting note referred to the intention to prepare a brief to commission consultants to carry out an assessment of need for aggregates in Oxfordshire and that this had not yet been actioned.
 - 2.4 Peter Day said that the brief would be completed by mid October and that tenders would be sought from at least 3 consultants. The successful consultant would be required to complete their report by December and that their findings on need would be reported to the Working Group in January 2011.
 - 2.5 The meeting agreed unanimously that this work needs to be completed as soon as possible, but that it is also important that it is a good quality piece of work that will provide an alternative figure of need that can be defended.
- 3. Assessment of Mineral Spatial Strategy Options**
 - 3.1 Peter Day introduced paper MW1 on the assessment of minerals spatial strategy options. He outlined the need for a new minerals strategy for Oxfordshire and the context for the generation of strategy options. The Minerals and Waste Core Strategy will include a strategy and policies for a 15 – 20 year period. There will be separate documents for site allocations. Initial spatial strategy options and then revised options had been the subject of stakeholder consultation during 2010 and a technical assessment of the options and a sustainability appraisal had been carried out. A preferred minerals strategy could now be selected on the basis of policy and is not dependent on the amount of mineral required.

- 3.2 Three options for sand and gravel have been identified: to concentrate on existing working areas; to move to new working areas; or to disperse working across both existing and new areas. A preferred strategy could be chosen based on one of these options or on a hybrid which draws upon elements of these options. There are single options for soft sand and for crushed rock, both based on continuing working in existing areas.
- 3.3 Peter Day advised that there is limited scope for further working at Sutton Courtenay and that this area would not be able to continue to provide sand and gravel throughout the plan period. Consequently a strategy based solely on existing working areas may result in increased concentration of working in the Lower Windrush Valley and Eynsham / Cassington / Yarnton areas. Concerns about the transport implications of increased working in these areas and the resultant increase in minerals traffic on the A40, at the Wolvercote roundabout and at the Peartree interchange with the A34 have been raised by the Highways Agency and OCC transport officers.
- 3.4 Cllr Hudspeth asked about the implications of increasing working in these West Oxfordshire areas for traffic on the A40 and its intersection with the A34. Martin Tugwell noted that the Sutton Courtenay could continue to supply sand and gravel for some years, which would give time to consider this further and explore possible mitigation measures.
- 3.5 Cllr Lindsey-Gale noted that although land at Nuneham Courtenay lies within the Radley existing working area, it is essentially a new working area which would require the creation of a new access onto the A4074. Peter Day confirmed that access from this area would be to the A4074, on the straight stretch south of the dual carriageway section.
- 3.6 Cllr Mathew questioned whether extensions to sites which are linked by conveyor to neighbouring plant sites can be really defined as extensions. It was clarified that continued extraction within existing working areas is a different issue from extensions to existing sites; it could involve extensions and/or new sites.
- 3.7 Cllr Lindsey-Gale noted that Nuneham Courtenay Parish Council had stated that working had not taken place at Radley for 30 years. She asked officers to verify when working had last taken place in the Radley area.
- 3.8 In response to Cllr Purse, Peter Day noted that the minerals industry had indicated a maximum mileage for sand and gravel deliveries of about 30 miles, but that most journeys average 15-20 miles.
- 3.9 Cllr Mathew thought that the pattern of supply for Oxfordshire as a whole was important and that the preferred strategy should take proximity to markets into account.

3.10 Peter Day said there would be a significant need for supply of aggregates to the continuing planned development of the Didcot and Wantage and Grove areas, and that option areas to the south of Oxford are closer to this Science Vale growth area. He explained that the assessment of options pointed to the possibility of a hybrid strategy which could combine the best elements of the three options to minimise mineral mileage by providing a spread of supply, which would also spread the burden. An example was set out at paragraph 7.5 of paper MW1, involving continued working in the Lower Windrush Valley and Eynsham / Cassington / Yarnton areas, the Radley area (northern part) the Sutton Courtenay area in the short term, and also at [REDACTED] and phased development of new areas of working in southern Oxfordshire, such as Cholsey, Clifton Hampden and Warborough / Shillingford / Benson (northern part).

3.11 [REDACTED]

3.12 Cllr Lindsey-Gale thought a hybrid option should not be considered since there had been no consultation on it; this was the first time it had been put forward. Peter Day explained that the possibility of a hybrid had been mentioned during the July consultations and the results of the consultation process and the technical assessment now pointed to this type of approach.

3.18 Cllr Mathew expressed support for a hybrid option which involved a balance of working in west Oxfordshire and in south Oxfordshire, to meet the needs of markets and to minimise mineral miles. He pointed out that the Lower Windrush Valley was enclosed by the Thames, the A40 and the A 415 and that practically all sites in Oxfordshire were subject to the same constraints such as archaeology, highways, bridges, flood risk and the like, and therefore the final decision needs to be based on sustainability and market proximity as well as the acreage per tonne consideration. He said that this pointed to the hybrid option as the most equitable and sensible solution.

3.19 Cllr Purse also supported a hybrid option that would provide a better balance of supply to meet demand both in west and north Oxfordshire and in south Oxfordshire.

3.20 Cllr Lindsey-Gale expressed support for option 1, continuing working in existing areas. She said the gravel areas which constitute Option 1 are

well placed in relation to the markets and best located to provide access to the principal road network. Reserves at existing sites can take us through the plan period. Existing sites have gone through a planning process and their suitability has already been accepted. It seems perverse to expect the aggregates companies to take on the costs of opening new sites, with new processing plants and new transport arrangements without a good business case for doing so. Minerals extraction is a demand led industry, and companies will only move when they have exhausted supplies. They are operating at 40% below expected targets at the moment and the housing industry does not expect an upturn in their market for the next ten years. Now we have a national hold on infrastructure projects. It is unlikely that there will be an upturn in a demand for gravel in the foreseeable future, and therefore there is no logical reason to plan to open new areas for extraction. It also relied upon areas which have already been permitted through the planning process.

- 3.21 Cllr Greene also supported option1, subject to a caveat that would allow other sites to be identified if required to meet future levels of demand.
- 3.22 Martin Tugwell suggested that such a caveat might be more appropriate in a site allocations document, to enable the control of the release of sites as aggregates are needed.
- 3.23 Cllr Tilley, as an observer, indicated that she favoured the principle of a hybrid option.
- 3.24 [REDACTED] 1, and therefore the majority view of the Working Group was for a strategy based on continued concentration of sand and gravel extraction in existing working areas. [REDACTED]
- 3.25 Martin Tugwell suggested that, given there are existing sites with permitted reserves which would enable an existing areas strategy to continue for some time and in the light of the work on determination of need which should be available in January, the Working Group's recommendation to Cabinet could be to support option 1 as the starting position for at least the short term but this position could be looked at again in January when the position on need has been established. The recommendation could include flexibility to review the possibility of new areas of working if the level of need for sand and gravel considered against the ability of existing areas to supply indicates this is necessary, taking into account proximity to markets.
- 3.26 Cllr Hudspeth thought that the recommendation to Cabinet should also include encouragement to increase secondary and recycled aggregates to reduce the need for primary aggregates. He noted that the County Council is asking the District Councils to provide better

information on the availability of recycled aggregates through the Spatial Planning and Infrastructure Partnership.

- 3.27 Cllr Mathew asked whether the consultant's brief for the need study would include a requirement to review the need for both primary and secondary and recycled aggregates, and whether it would consider geographical differences of need within the county. Peter Day confirmed that the brief would cover need for both primary and secondary and recycled aggregates. In response to Cllr Tilley, Peter Day confirmed that the consultant's brief would be made available to the members of the Working Group.
- 3.28 Cllr Mathew asked Cllr Hudspeth to write to Government, asking that an increased proportion of the £2/tonne Aggregates Levy is returned to local projects and goes towards encouraging secondary and recycled aggregates. Cllr Hudspeth said that he has already written to the Government about this but was happy to do so again.
- 3.29 Martin Tugwell suggested that the proposed consultation on a preferred strategy approach should be deferred until the spring and combined with consultation on need for aggregates and other policy issues. This would reduce costs and enable work on the need study to be progressed as quickly as possible, but it would not affect the overall timetable for the Core Strategy. It was noted that it would also reduce consultation fatigue.
- 3.30 It was agreed that both paper MW1 and the note of this meeting should be included in the report to the Growth & Infrastructure Scrutiny Committee meeting on 6 October.
- 3.31 It was agreed that the recommendation of the Working Group to the Cabinet meeting on 19 October is:
- for sand and gravel – a starting position spatial strategy for concentration of extraction in existing areas of working, at Lower Windrush Valley, Eynsham / Cassington / Yarnton, Radley, Sutton Courtenay and Caversham, but that this position be looked at again in January when the requirement for sand and gravel supply has been established, [REDACTED]
 - for soft sand – a spatial strategy for extraction in three areas, at south east of Faringdon, Tubney / Marcham / Hinton Waldrist and Duns Tew;
 - for crushed rock – a spatial strategy for extraction in three areas, at north of Bicester to the east of the River Cherwell, south of the A40 near Burford and south east of Faringdon (associated with soft sand extraction);
 - for consultation on a preferred strategy for mineral working to be combined with consultation on the need for aggregates supply and

other key minerals policy matters and carried out in Spring 2011, following consideration by the Working Group in January 2011 and by Cabinet in February 2011.

4. Date of Next Meeting

- 4.1 The next meeting will be held in late January 2011, the date to be confirmed once the timetable for the need assessment report is known.

LGP/PHD
28 September 2010

CABINET – 19 OCTOBER 2010

ITEM 5 – PETITIONS AND PUBLIC ADDRESS

Public Address

The Leader of the Council has agreed the following requests to address the meeting:-

Item	Speaker
Item 6 – Financial Monitoring	Councillor Armitage, Shadow Cabinet Member for Finance & Property Councillor Liz Brighthouse, OBE
Item 7 - Oxfordshire Minerals and Waste Development Framework: Core Strategy - Preferred Minerals Strategy	[REDACTED]
Item 8 - Progress Report on CLA and Leaving Care	Cllr. Jean Fooks (Opposition Deputy Leader for Cabinet Member for Children, Young People & Families referring to her role as a member of Corporate Parenting Panel)
Item 9 - Format of County Council meeting	Cllr. Zoe Patrick (Opposition Leader)
Item 10 - Corporate ICT Strategy	Cllr. Jean Fooks (Opposition Deputy Leader)
Item 11 – Customer Service Strategy	Cllr. Jean Fooks (Opposition Deputy Leader)
Item 12 – The Future of the Council magazine ‘Oxon News’	Cllr. Zoe Patrick (Opposition Leader)

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Oxfordshire Minerals and Waste Development Framework **Sustainability Appraisal/Strategic Environmental Assessment**

Revised Minerals Spatial Strategy Options

September 2010



Revision Schedule

SA Report – Revised Minerals Spatial Strategy Options

September 2010

Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	20.08.10	Draft	Jennifer Boca Senior Environmental Specialist	Andrew Wooddisse Associate	Andrew Wooddisse Associate
02	25.08.10	Final	Jennifer Boca Senior Environmental Specialist	Andrew Wooddisse Associate	Andrew Wooddisse Associate

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1 Introduction

1.1 Oxfordshire Minerals and Waste Development Framework

The Council is preparing a Minerals and Waste Development Framework (MWDF) for Oxfordshire. The Minerals and Waste Core Strategy Development Plan Document (MWDPD) 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 over a 15 year period.

With regard to minerals, the Core Strategy DPD will identify a spatial strategy for sand and gravel and crushed rock extraction to meet need as well as maintain land banks for primary aggregates in line with national policy and guidance.

1.2 Minerals Spatial Strategy Options

In February 2010, the Council prepared an initial draft set of spatial strategy options for sand and gravel, soft sand and crushed rock working. Consultation with key stakeholders on the spatial strategy options was undertaken during July 2010 and this has led to further refinement of the spatial strategy options. The key changes to the options are:

- The extent of the areas in each of the options has been reduced through an assessment of the realistically workable geological resource, using data from the BGS geological mapping of sand and gravel and Mineral Assessment Reports.
- Sites which are designated for their national environmental or landscape importance have been removed from the options, such as Special Areas of Conservation (SACs), Areas of Outstanding Natural Beauty (AONBs) and National Nature Reserves (NNRs). Smaller sites such as Sites of Special Scientific Interest (SSSIs) and Scheduled Ancient Monuments (SAMs) which fall within these option areas will be given policy protection in the Core Strategy.
- The phased approach for sand and gravel has been changed to address the need for mineral working only during the plan period; and it focuses more on moving to new areas of working than on continuation of working in existing areas (albeit this would still be likely to be needed in the short term).
- Both the concentration on existing working areas approach and the new areas of working approach for sand and gravel are concentration strategy options; and are not related to the location of demand. (Location of demand will be a factor to be used in assessing the options rather than in defining them.)
- Possible new areas of working are not included in the same option as concentration on existing working areas, to provide greater distinction between options.
- The dispersed working approach for sand and gravel seeks to disperse working across all available resource and is not related to the location of demand.

The Council is consulting on the revised spatial strategy options with key stakeholders in summer 2010 and is working towards a preferred minerals strategy for public consultation later in 2010.

1.3 Background to Appraisal

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 draft spatial strategy options for mineral working (February 2010) and of the revised options in August 2010. This report relates to the appraisal of the revised options. The findings of the SA of the initial Minerals draft spatial strategy options² can be obtained from the Council's website.

SA seeks to identify the economic, social and environmental impacts of a plan and suggests ways to avoid or minimise negative impacts and maximise positive ones.

1.4 Appraisal Methodology

SA Framework

The revised options were appraised against the already established SA framework for the Oxfordshire MWDF. The SA framework objectives are compiled using the information gathered during the early stages of the Scoping process and cover the full range of environmental impacts stipulated by the SEA Directive and the Regulations, and the broad range of economic and social issues proposed in the current guidance on SA³.

The objectives also reflect regional sustainability objectives as well as feedback from a range of consultees to ensure they capture the key sustainability issues relevant to the County. The table below outlines the SA framework including the underlying sub-objectives and indicators.

¹ As required through the Strategic Environmental Assessment Directive (2001/42/EC).

² Scott Wilson (May 2010) Oxfordshire Minerals and Waste Development Framework, Minerals Spatial Strategy Options SA/SEA Report

³ ODPM (2005) Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents

Table 1.1 the SA Framework

SA Objective	Appraisal Criteria/Sub-objectives	Possible Indicators
1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species	Will the MWDF protect, maintain and enhance UK BAP Priority Habitats?	Number of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Habitats Plans for the creation of calcareous grasslands, lowland acid grassland and reedbeds Number of planning applications which have an impact on designated sites or BAP habitats
	Will the MWDF conserve and enhance internationally, nationally and regionally important sites of nature conservation importance?	Number of permitted applications which result in restoration of favourable/favourable recovering condition or buffering of designated areas through appropriate habitat creation.
	Will the MWDF protect, maintain and enhance UK BAP Priority Species?	Number of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Species Plans.
	Will it contribute to the aims of the Conservation Target Areas?	Contribution of the MWDF policies to Conservation Target Areas for restoration of minerals and waste management sites.
	Will it protect and conserve geological SSSIs and RIGs?	Number of permitted applications which include conditions for the protection or enhancement of RIGs or geological SSSIs.
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?	Number of permitted applications for Minerals and Waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations.
	Will the MWDF protect and enhance the historic and	Number of permitted applications for Minerals and

	prehistoric environment of Oxfordshire?	Waste development which include conditions for the protection or enhancement of the historic and prehistoric environment in Oxfordshire.
3. To maintain and improve ground and surface water quality	Will the MWDF affect groundwater quality?	Number of permitted applications affecting source protection zones 2 and 3 Number of permitted applications which assess the risk of contamination of groundwater
	Will the MWDF affect surface water quality?	Number of sites within 50m of a watercourse Number of permitted applications requiring abstraction licences
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?	Number of permitted applications with routeing agreements which avoid AQMAs Survey of trip generation to civic amenity sites
	Will the MWDF lead to increased dust and/or odours?	Number of complaints relating to dust/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?	Proportion of waste and aggregates transported by rail or water Quantity of biodegradable wastes landfilled
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.	Number of permitted sites for minerals and waste development within the flood plain (flood zone 3a/) Number of mineral restoration schemes identified for flood attenuation
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?	Distances travelled by road from new applications to settlements (waste) or markets Number of sites with rail/water access
	Are sites in the MWDF well located in relation to surrounding settlements for waste, or minerals for markets?	Number of sites with suitable access to appropriate roads
	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 human health	Will the MWDF have impacts which could have a harmful effect on human health?	Number of permitted applications for mineral or waste development within 250m of sensitive receptors (settlements)
9. To minimise the negative impacts of waste management facilities and mineral extraction on local amenity	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 countryside?	Number of sites for mineral or waste development within 250m of sensitive receptors (settlements) Number of permitted applications with restoration conditions which enhance local amenity and /or improve access to the countryside.
10. To protect, improve and where necessary restore land and soil quality	Will the MWDF affect high grade agricultural land?	Area of high grade agricultural land lost to minerals and waste development
	Will the MWDF lead to soil pollution or contamination?	Incidences of land contamination related to minerals and waste development
11. To contribute towards moving up the waste hierarchy in Oxfordshire.	Will the MWDF policies reduce the amount of waste produced?	Amount of waste arising in Oxfordshire
	Will the MWDF encourage re-use, recycling/composting and recovery?	Amount of waste recycled and recovered
12. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to the appropriate minerals apportionment		Number of permitted applications for waste management to meet targets to achieve net waste self sufficiency. Number of permitted applications which contribute to meeting apportionment.
13. To promote efficient use of natural resources and avoid unnecessary sterilisation of mineral resources	Will the MWDF encourage use of secondary and recycled aggregates, and make provision for these sites? Does the MWDF encourage minimising the area of land take per tonne of mineral aggregate produced?	Number of permitted applications for secondary and recycled aggregate developments.
	Will the MWDF avoid sterilising mineral resources by preventing unnecessary development on or near to mineral resources?	Identification of mineral safeguarding areas in the MWDF
	Will the MWDF promote dialogue between local authorities to ensure valuable	Evidence of cross-boundary liaison meetings

	mineral resources are not sterilised by non-minerals development?	
14. To support Oxfordshire's economic growth and reduce disparities across the county.	Will the MWDF generate new jobs for the county?	Number of direct jobs created in the waste/mineral sector per year
	Will the MWDF support and encourage the growth of small and medium size business?	Number of new mineral and waste permissions
	Will the MWDF encourage the provision of more locally based skills and facilities?	

Approach to Options Appraisal

The appraisal involved assessing each of the revised spatial strategy options for mineral working against the SA objectives taking account of both potential positive and negative effects. The appraisal also takes into account other impact dimensions, including whether the effects are primary, secondary, direct, indirect, permanent, short-term, medium-term, long-term or cumulative (the term cumulative effects is also used to describe synergistic and secondary effects).

Matrices were used to identify the sustainability effects and these are provided in Appendix 1. The matrices allow for the comparison of options and also consist of a summary of the principle underlying each of the options.

The appraisal was based on a combination of expert judgement and analysis of baseline data gathered in the Scoping Report and other available background information. Due to the strategic nature of SA, it is difficult to make predictions with a high degree of certainty and more detailed information is required in some instances. Where this is the case, detailed assessments are recommended at the site selection and planning application stages in order to further confirm the likelihood of impacts and their magnitude and propose mitigation measures where relevant. The table below shows the symbols used when completing the matrices.

A new symbol +/- has been included in the table below to denote where an option has both positive and negative effects (*this was due to the fact that different options consisted of various potential areas of mineral working and in some cases there were potential negative effects associated with working some areas identified within an option and some potential positive effects associated with other areas in the same option*).

Table 2.2 Appraisal symbols

Symbol	Likely effect on the SA Objective
++	The option is likely to have a very positive impact
+	The option is likely to have a positive impact
0	No significant effect / no clear link
?	Uncertain or insufficient information on which to determine impact
-	The option is likely to have a negative impact
--	The option is likely to have a very negative impact

+/-

The option is likely to have some positive and some negative effect

1.5 Consideration of the Business as Usual Option

Currently, planning policy for minerals and waste in Oxfordshire is contained in the Oxfordshire Structure Plan 2016 and the Oxfordshire Minerals and Waste Local Plan (MWLP, adopted July 1996)⁴. Following changes to the planning system in 2004, policies in existing plans were 'saved' for three years to September 2007, when they would expire unless the Secretary of State agreed to 'save' them beyond that date.

Accordingly, Oxfordshire County Council applied to the Secretary of State for policies in the MWLP that met the criteria specified by the Government to be saved beyond September 2007. This resulted in 46 policies in the MWLP to continue to be 'saved'. Three policies in the Oxfordshire Structure Plan are also saved beyond the expiry date, including a policy on criteria for locating sand and gravel working.

As part of the MWDF preparation process, the Council considered the merits of continuing to rely on the current planning policy framework. However, it was decided that this option was not sustainable and would not provide a clear long term strategy for future minerals and waste development in Oxfordshire for the following reasons:

- Some saved policies from the previous plan may be out of date in relation to current policy and legislation; and
- Very few areas which are allocated in the Local Plan for minerals extraction are still to be worked.

This option was therefore not given further consideration by the council, and it has not been appraised further in the SA.

1.6 Sand and Gravel Sub-regional Apportionment

When he revoked the South East Plan in July 2010, the Secretary of State for Communities and Local Government issued guidance⁵ for planning authorities. This says that mineral planning authorities should now work from the aggregates apportionment in the March 2010 Proposed Changes to South East Plan Policy M3, which set a sand and gravel figure of 2.1 million tonnes a year for Oxfordshire. The guidance goes on to say that an alternative figure can be used if it is based on new or different information and a robust evidence base.

The County Council is opposed to the figure of 2.1 million tonnes a year and believes it is unreasonably and unrealistically high. The Council therefore intends to gather information and evidence, and develop a methodology, to produce a locally derived assessment of the quantity of sand and gravel that should be supplied from quarrying in Oxfordshire.

⁴ www.oxfordshire.gov.uk

⁵ Chief Planning Officer Letter: Revocation of Regional Strategies, July 6, 2010.

As an interim position, a range of possible figures for sand and gravel are being used against which to test options. The County Council is looking at using a range between 1.1 and 1.6 mtpa, based on average sand and gravel production over the last 5 year (1.15 mtpa) and 10 year (1.48 mtpa) periods and the apportionment proposed by SEERA in March 2009 (1.58 mtpa).

Although the County Council is opposed to the Secretary of State's guidance figure of 2.1 million tonnes as set out in the March 2010 Proposed Changes, it is a recommendation of this SA process that spatial strategy options should also be tested against this guidance figure as part of the options development process and sustainability appraisal.

2 Results of the Options Appraisal

2.1 Sharp Sand and Gravel Options

As detailed in section 1.6 above, the Council has adopted a flexible approach with regard to the amount of sand and gravel it needs to plan for, to meet demand to 2026, using a range between 1.1 and 1.6 mtpa.

Historically this figure has been divided between provision for sharp sand and gravel and soft sand, based on an average of the last 3 years' sales. This has resulted in a split of 83% for sharp sand and gravel and 17% for soft sand.

The council has revised the initial draft spatial strategy options and is now considering the following revised options for sand and gravel.

Option 1: Concentration on Existing Working Areas

This option seeks to concentrate sand and gravel working in areas where working is currently taking place or has taken place recently. This is a refinement of the previous option 1c and includes areas both to the west / north west and south / south east of Oxford. However, these are now limited to areas around existing or recent sand and gravel working areas and include:

- Lower Windrush Valley (LWV);
- Eynsham/Cassington/Yarnton (ECY);
- Radley; and
- Sutton Courtenay.

Option 2: Concentration on New Working Areas

Many areas of existing working have experienced mineral extraction over a number of years, impacting on local communities and changing the local landscape. This option identifies new areas where working would be concentrated, to replace existing areas of working. In the short term, while the new areas are planned, some extensions to existing sites might be needed to maintain supply. The areas included in this option are:

- Clanfield/Bampton;
- Warborough/Shillingford/Benson (WBS);
- Cholsey;
- Sutton/Stanton Harcourt; and
- Culham/Clifton Hampden/Dorchester (CCD).

Option 3: Dispersed Working

The initial draft dispersal option sought to disperse working related to markets, to reduce mineral miles. This option has been amended to provide for working to take

place within any of the areas of potential sand and gravel resource, so that it is a truly dispersed option. The areas included in this option are:

- Finmere;
- Clanfield/Bampton;
- Lower Windrush Valley (LWV);
- Eynsham/Cassington/Yarnton (ECY);
- Faringdon;
- Radley;
- Sutton Courtenay;
- Warborough/Shillingford/Benson (WBS);
- Cholsey;
- Caversham;
- Culhum/Clifton Hampden/Dorchester (CCD); and
- Sutton/Stanton Harcourt.

Sand and Gravel Options - Summary of SA findings

Option 1 – This option would lead to concentration of working in existing and former areas of sand and gravel working. Although the proposed areas are generally well located in terms of proximity to important nature conservation sites, some areas within ECY and the LWV are close to important nature conservation designations (SSSIs, SAC). These designations could constrain working in some sites within these areas. Where there is potential for adverse effects due to proximity to nature conservation sites, mitigation measures should be put in place to protect these areas.

The LWV lies within the Conservation Target Areas (CTAs) identified by the Oxfordshire Nature Conservation Forum⁶. The main aim within CTAs is to restore biodiversity at a landscape-scale through maintenance, restoration and creation of BAP priority habitats. Further working in this area would therefore contribute positively to the planned restoration and habitat creation at a large-scale which combined with existing restoration plans would have significant beneficial cumulative effects for the local community and wildlife. However, these benefits would be in the long-term as mineral works are likely to take years before the restoration plans are implemented.

There are no national landscape designations in any of the areas proposed within Option 1. However, increased working in the identified areas has potential for negative cumulative landscape and visual effects for the local communities living nearby. Measures to mitigate against negative effects on the already extensively modified landscapes should be required at site selection and planning application stages.

⁶ <http://www.oncf.org.uk/biodiversity/cta.html>

SAMs are found within each of the option 1 proposed areas. Mineral working can lead to damage to archaeological features and so sites should be well sited away from these and where they are in close proximity, mitigation measures against adverse effects should be in place (where applicable) before extraction of materials.

Environment Agency (EA) requires that development should be avoided in the floodplain where possible and would require the sequential and (where appropriate), the exception tests as required through Planning Policy Statement 25 (PPS25). There is potential for cumulative negative effects on ground water flow as a result of concentration of mineral workings within one area and in particular in the LWV and the Cassington area.

Although option 1 involves continuing working in existing areas of sand and gravel extraction, the County Council has confirmed that this option if taken forward would seek to continue the existing pattern and level of working and so it is anticipated that there would not be significant increases in traffic along the A40 (ECY and LWV), the A415 (LWV), or the A4130 (Sutton Courtenay). However, working in the Radley/Nuneham Courtenay area could lead to increases in traffic on minor roads and through villages such as Kennington and Radley. Careful consideration of access and routeing as well as impacts on the local communities (congestion, noise and air) would be required at the site selection stage as well as at the planning application stage to facilitate mitigation of adverse effects where applicable.

Some parts of the area identified in Radley present opportunities for use of water to transport materials as they can be accessed via the River Thames. If sites are taken forward in this area, moving materials via the river should be encouraged wherever possible; subject to consideration of environmental effects and costs.

The proposed areas are generally well located in terms of proximity to potential markets (except for areas to the north of the county). Moving materials by road would continue to contribute to green house gas (GHG) emissions having negative effects on climate change. Where potential for alternatives to road transport exist, these should be encouraged through policy or conditions to planning permissions.

Summary of principle underlying option 1: *Seeking to concentrate extraction in areas where working is currently taking place or has taken place recently has the economic advantages of using existing infrastructure as well as labour force. It also presents opportunities for co-ordinated large-scale restoration projects which would in the longer term lead to beneficial effects for the local communities (through recreation and leisure opportunities) as well as for wildlife.*

Option 2 – This option identifies new areas where working would be concentrated, to replace existing areas of working. There are no nature conservation sites of international or national significance in any of the proposed areas. Some areas are constrained by the presence of SAMs (Clanfield/Bampton, Warborough and Dorchester). Here, mitigation measures against adverse effects might be required. Warborough, Cholsey and Dorchester also lie close to the AONB. The extent of actual areas available for working in these areas would be constrained by this designation.

Sutton/Stanton Harcourt is not affected by landscape or cultural heritage designations.

Opening up new areas for sand and gravel extraction could lead to adverse effects on access routes to be used to move materials. Working in Clanfield/Bampton would affect the A4095, B4020 and A417 depending on the exact sites chosen and is likely to require improvements in infrastructure to be deliverable. Working in WBS and CCD has potential to affect the A4074 while working in Sutton/Stanton Harcourt could affect the B4449; however, the A4074 is designated a local lorry route by the County Council. Further assessment on the suitability of these roads to handle increases in HGV movements should be provided in order to ascertain where there is likely to be adverse effects. Working in Cholsey has potential to use rail to move materials but if accessed by road there is potential for negative effects on the A4130 as well as on the A329 (depending on the sites selected).

With regard to proximity to markets, the proposed areas are generally well located (except for areas to the north of the county).

Working in the new areas could lead to some negative effects on the surrounding communities in terms of amenity (e.g visual, noise, traffic impacts) depending on location of sites and operation of works. However, these effects could be judged as being potentially less significant (subject to further detailed analysis on specific impacts) compared to option 1, due to the fact that option 1 could lead to cumulative negative effects on communities that have already experienced the impacts of mineral working for many years.

There would be some positive economic benefits in terms of providing employment in the new areas of working as well as in meeting Oxfordshire's sand and gravel needs.

Restoration following working would lead to beneficial effects for biodiversity as well as creating recreational opportunities for the local communities

Summary on principle underlying option 2: *Opening up new areas for working has the positive benefit of relieving communities that have experienced mineral working for long periods in the past therefore distributing the impacts of mineral working to other parts of the county. This option transfers impacts to other communities although these are judged to be less significant compared to option 1 due to the cumulative nature of option 1 effects. This option would require some extensions to some existing sites and so there would still be some cumulative effects in these areas although these would be for a shorter period, compared with the long-term nature of option 1 cumulative effects. Option 2 would lead to creation of new jobs in the identified areas but it would also require industry to re-locate or build new infrastructure and although this could lead to some negative economic effects in the short term, in the long term the economic benefits are judged to be positive.*

Option 3 – This option seeks to disperse mineral working to any areas of potential sand and gravel resource in the County and includes the areas covered by options 1 and 2 as well as Finmere, Faringdon and Caversham. As with option 1 and 2 above, the following issues would arise:

Nature conservation constraints – LWV (SSSI) and ECY (SSSI, SAC).

AONB constraints– Warborough, Cholsey and Dorchester.

SAMs constraints– all option 1 areas and Clanfield/Bampton, Warborough and Dorchester in option 2.

Transport impacts– LWV (A40, A415) and ECY (A40, A44), Sutton Courtenay (A34, A4130), Radley (A4074, but with potential for water based transport), Clanfield/Bampton (A4095, B4020, A417), WSB and CCD (A4074), Sutton/Stanton Harcourt (B449), Cholsey (A4130, A329 but area has potential for rail use) and Faringdon (A420).

Flood risk and ground water impacts - Some areas within LWV, ECY, Radley and Sutton Courtenay lie within flood risk zones 2 and 3. There is also potential for cumulative negative effects on ground water flow as a result of concentration of mineral workings within the LWV and the Cassington area.

As with the other options, this option would lead to some positive benefits associated with restoration as well as economic benefits through job creation and investment in new areas. However, it would also lead to some negative cumulative effects in areas within option 1 as discussed previously.

Distributing extraction has the advantage of reducing distances aggregates are moved by road thereby minimising emissions and local traffic impacts. However, there would still be some negative effects associated with moving materials by road.

Summary on principle underlying option 3: Dispersing extraction has both positive and negative effects. Positive effects include potentially reducing the distances materials are moved, creation of new jobs, distributing of impacts around the county and offering restoration opportunities that could benefit communities in the longer term. The negative effects include the fact that more communities would be affected by the effects of mineral working (including some cumulatively as in option 1). This option has potential not to deliver large-scale restoration projects as works would be distributed in different parts of the county. The need for investment in new areas may impact negatively on industry e.g. moving infrastructure etc, but this is likely to be a short-term effect.

2.2 Soft Sand

The soft sand option has been revised to now include an area of resource at Duns Tew in the north of the county. The area in the south west of the county has been reduced to two smaller areas located close the A420. When assessed against the SA objectives, both the identified areas (north and south of county) are close to SSSIs. The Tubney/Marcham/Hinton Waldrist area is also close to Cothill Fen SAC. Proximity to these sites may affect the extent of areas that can be worked and mitigation measures may be required to ensure there are no adverse effects on them.

However, mineral working has potential for adverse visual and landscape effects, and mitigation measures should be in place where sensitive receptors like housing may be affected leading to adverse visual effects. There are sites of archaeological value (SAMs) close to the Tubney/Marcham/Hinton Waldrist area. Working in this area would need to take account of the presence of the monuments and protect them accordingly.

It is not envisaged that soft sand working in both the identified areas to the north and south west would lead to significant increases in HGV traffic. However, there is still potential for some negative impacts from increased traffic on the local roads including

on the B4030/A260 (Duns Tew) and on the A420, A417, and B4508 (south west sites). Further assessment on access and suitability of roads to accommodate more HGV traffic is recommended at the site selection stage.

The revised option will have positive economic effects by providing local employment as well as meeting the county's soft sand needs. This option also allows the current pattern of extraction of two different quality sands to be continued which has a positive economic benefit.

Overall Summary on Principle underlying Soft sand option: *Identifying two areas of working in the south of the county and one in the north of the county will help minimise traffic impacts as well as spread the effects of soft sand working more equitably. However, there will be some cumulative effects on communities living close to existing sites and careful consideration should be given when identifying sites and allowing further extraction so as to minimise the overall effects of continued working in these areas. The two areas in the south west of the county have different quality sands and this option allows for the working of the two types of sand. Continuing with the existing pattern provides certainty to industry and also takes advantage of existing infrastructure.*

2.3 Crushed Rock

The revised option is made up of three areas based around existing limestone working areas. The option also includes reducing the area of search identified near Ardley quarry in the north of the County. The areas included in the option are:

- South of Burford area;
- East of River Cherwell, North of Bicester; and
- East/south east of Faringdon.

The SA findings indicate that some areas are constrained by the presence of SSSIs (Ardley and east of Faringdon near Tubney). There are no similar constraints in areas near Hatford and Burford. None of the areas identified are within AONB. However, there are SAMs in the area north of Bicester and close to the area east of Faringdon). Mitigation measures against adverse effects on these monuments as well as on local visual and landscape effects may be required prior to extraction of materials to avoid adverse effects.

As the identified areas are based around existing limestone working areas, if working continues at the current level, it is expected that there would be no increase in effects on air quality, traffic and on GHG emissions as traffic levels would be the same as current. However, a significant increase in working in any of the areas has potential for significant negative effects especially with regard to traffic. Careful consideration should be given to access and road capacities when considering sites for further working.

Continued working in the existing areas will result in cumulative effects over time on the local communities including on landscape and local amenity – noise, air, dust and traffic impacts. However, mitigation measures at the planning application stage can help reduce such impacts. It is also envisaged that there will be no significant increase in working in any particular area (based on the information provided by the County Council), and so no significant negative cumulative effects are expected.

Summary on principle underlying crushed rock option: *The revised crushed rock option would lead to a distribution of effects of crushed rock working in the county therefore potentially preventing adverse effects on a single locality. It also leads to a reduction in the area identified in the north of the county. This option takes advantage of existing infrastructure as well as continuing to provide local employment. This has positive economic benefits. In the long term, there is potential for negative cumulative effects on the communities living near the identified areas. Careful consideration should be given to the exact location of sites and works, relative to housing and other sensitive receptors to militate against potential negative effects.*

Appendix 1 Appraisal Matrices

Sand and Gravel Strategy Options

Sustainability Appraisal Objectives	Options			Summary and mitigation measures
	Option 1- Concentrating on existing areas	Option 2- Concentrating on new areas	Option 3 – Dispersed working	
1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species	+/- Proposed areas generally well located in terms of proximity to important nature conservation sites but some areas within Eynsham/Cassington/Yarnton (ECY) and Lower Windrush Valley (LWV) lie close to important nature conservation designations (SSSIs, SAC)	+ No potential adverse effects on SSSIs or SAC	+/- Proposed areas generally well located in terms of proximity to important nature conservation sites but some areas within ECY and LWV lie close to important nature conservation designations	<p>Option 1 and 3 are somewhat constrained by the presence of important nature conservation designations in these areas. Development in the ECY area and the LWV would need to demonstrate that mitigation measures would be in place to avoid adverse effects to SSSIs and SAC.</p> <p>All options offer opportunities for biodiversity conservation through restoration although option 3, with a dispersed pattern of working, may offer less potential for landscape scale restoration.</p>
2. Protect and enhance landscape character, local distinctiveness and historic and built heritage	+/- There are no landscape designations in any of the areas proposed but there are Scheduled Ancient monuments (SAM) within each of the areas.	+/- SAMs are found within Clanfield Bampton, Warborough and Dorchester areas. Warborough, Cholsey and Dorchester also lie close to AONB. Stanton Harcourt is not affected by either landscape or archaeological designations.	+/- Some areas within this option (also included in options 1 and 2) are constrained by both landscape and archaeology.	<p>Option 1 includes areas that are generally well located with regard to proximity to landscape and historic environment designations apart from proximity to SAMs in several of the areas; working in these areas would need to demonstrate that there are no adverse effects on the SAM.</p> <p>Option 2 - Proximity to the AONB for southern areas (Dorchester, Warborough and Cholsey) presents a constraint for sites in that area and proposals here would need to include mitigation measures to avoid adverse effects on the landscape.</p> <p>Option 3 –Areas within Option 3 that are constrained with regard to potential negative impacts on archaeology include (ECY, LWV, Radley, Sutton Courtenay, Clanfield / Bampton, Warborough, and Dorchester) while those constrained by AONB include Dorchester, Warborough, Cholsey and Caversham.</p> <p>Mitigation measures to avoid adverse effects on the identified designations would be required at the site selection and planning application stages.</p>

Sand and Gravel Strategy Options

Sustainability Appraisal Objectives	Options			Summary and mitigation measures
	Option 1- Concentrating on existing areas	Option 2- Concentrating on new areas	Option 3 – Dispersed working	
3. To maintain and improve ground and surface water quality	?/-	?/-	?/-	It is expected that mitigation measures would be required to protect water resources before planning permission is granted. The Environment Agency (EA) has expressed concern regarding significant increase in working in LWV as well as ECY due to potential in increase of low river flow issues and risk to nature conservation receptors within these areas.
4. To improve and maintain air quality to levels which do not damage natural systems	-	-	-	Movement of sand and gravel by road has potential for negative impacts on air quality. The significance of effect should be assessed at the planning application stage when details on access routes to sites and numbers of vehicle movements are available.
5. To reduce greenhouse gas emissions to reduce the cause of climate change	-	-	-	The Scoping report notes that present movements of aggregates in Oxfordshire are by road transport. Assuming all options will lead to continued use of road transport, this will contribute to continued GHG emissions associated with moving minerals by road
6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change	?/-	?/-	?/-	Some areas within LWV, ECY, Radley, Sutton Courtenay, Clanfield/ Bampton, WBS, Stanton Harcourt and Clifton Hampden lie within flood zones 2 and 3. Within these areas, the sequential test and where appropriate the exception tests will be required by the EA before sites are allocated.

Sand and Gravel Strategy Options

Sustainability Appraisal Objectives	Options			Summary and mitigation measures
	Option 1- Concentrating on existing areas	Option 2- Concentrating on new areas	Option 3 – Dispersed working	
7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network	<p>--</p> <p>Continuing the existing level of working in LWV and ECY is unlikely to lead to increases in traffic levels along the A40 and similarly, working in Sutton Courtenay at current levels is unlikely to lead to increases in traffic on the A34. However, working in the Radley area has potential to lead to increases in HGV traffic on local roads.</p>	<p>-</p> <p>Working in Clanfield/Bampton could lead to increased traffic on the A4095, B4020 and A417 depending on the sites chosen. Infrastructure improvements are likely to be required to enable working in this area. The WBS area could result in traffic increases on the A4074, although this road is a designated lorry route. Working in Stanton Harcourt could impact negatively on the B449.</p>	<p>-- Similar to options 1 and 2</p>	<p>Moving aggregate minerals by road can have significant negative effects on the road network (depending on number of movements). Further working in areas of existing working (option 1) could have significant negative effects on the road network, however, the County Council would seek to ensure that working in these areas was at the same level as current works to mitigate against further increases in HGV traffic in these areas.</p> <p>Although option 2 has potential for some negative effects on the local roads, this is largely limited to the Clanfield/Bampton area.</p> <p>All options include sites that offer potential for use of sustainable transport e.g. Radley and Cholsey.</p> <p>This assessment is based on professional judgment, the baseline information presented in the scoping report and information on options being considered provided by the County Council. Detailed transport assessments are recommended at the site selection and planning application stage to ascertain number of additional or new HGV movements and their impacts on the road network.</p>
8. To minimise negative impacts of waste management facilities and mineral extraction on human health	0	0	0	<p>Although the broad areas proposed include settlements and other sensitive receptors, it is expected such areas would not form sites for mineral extraction and that mineral working would not be in close proximity to sensitive human receptors. It is also expected that mitigation measures would be in place to offset potential negative health effects e.g. from dust and noise.</p>

Sand and Gravel Strategy Options

Sustainability Appraisal Objectives	Options			Summary and mitigation measures
	Option 1- Concentrating on existing areas	Option 2- Concentrating on new areas	Option 3 – Dispersed working	
9. To minimise the negative impacts of waste management facilities and mineral extraction on local amenity	--	-	--	Mineral extraction is likely to have some negative impacts on amenity including increase in HGV movements, noise and visual effects. Option 1 and 3 are judged as likely to have cumulative negative effects on communities living close to proposed areas where mineral extraction is already taking place or has taken place in the past.
10. To protect, improve and where necessary restore land and soil quality	++	+	+	Minerals working will be accompanied by proposals for restoration and in some cases e.g. in Option 1 restoration would contribute to the creation of large areas for wildlife conservation and improved recreational activities
11. To contribute towards moving up the waste hierarchy in Oxfordshire	0	0	0	
12. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment	++	++	++	

Sand and Gravel Strategy Options

Sustainability Appraisal Objectives	Options			Summary and mitigation measures
	Option 1- Concentrating on existing areas	Option 2- Concentrating on new areas	Option 3 – Dispersed working	
13. To promote efficient use of natural resources and avoid unnecessary sterilisation of mineral resources	++	++	++	
14. To support Oxfordshire's economic growth and reduce disparities across the county	++	++	++	

Summary of Principles underlying Options

Option 1: Seeking to concentrate extraction in areas where working is currently taking place or has taken place recently has the economic advantages of using existing infrastructure as well as labour force. It also presents opportunities for co-ordinated large-scale restoration projects which would in the longer term lead to beneficial effects for the local communities (recreation and leisure) as well as for wildlife. However, this option has potential to lead to cumulative negative effects on the local communities especially with regard to traffic and amenity issues as well as on ground water and surface water flows. The long-term nature of mineral works means that communities within/close to the identified areas will continue to experience the effects of mineral working for the foreseeable future.

Option 2: Opening up new areas for working has the positive benefit of relieving communities that have experienced mineral working for long periods in the past therefore distributing the impacts of mineral working to other parts of the county. This option transfers impacts to other communities although these are judged to be less significant compared to option 1 due to the cumulative nature of option 1 effects. Option 2 would lead to creation of new jobs in the identified areas but it would also require industry to move or build new infrastructure and although this could lead to some negative economic effects in the short term, in the long term the economic benefits are likely to be positive.

Option 3: Dispersing extraction has both positive and negative effects. Positive effects include potentially reducing the distances materials are moved, creation of new jobs, distributing of impacts around the county and offering restoration opportunities that could benefit communities in the longer term. The negative effects include the fact that more communities would be affected by the effects of mineral working (including some cumulatively as in option 1). This option has potential not to deliver large-scale restoration projects as works would be distributed in different parts of the county. The need for investment in new areas may impact negatively on industry e.g. moving infrastructure etc, but this is likely to be a short-term effect.

Soft Sand – Meet demand from south west of the county (near Faringdon) as well as from the north (Duns Tew)		
SA Objectives	Comments	
1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species	- SSSIs close to or within all of the proposed areas	The presence of SSSIs will affect the extent of area that can be worked. Mitigation measures will be required where working is close to designated areas. Restoration of sites has the potential to result in creation of new habitats.
2. Protect and enhance landscape character, local distinctiveness and historic and built heritage	0/-	None of the areas identified are within AONB. However, there are SMs close to the Tubney/Marcham/Hinton Waldrist area. Mitigation measures against adverse effects on these as well as on local visual and landscape effects would be required prior to extraction of materials to avoid adverse effects
3. To maintain and improve ground and surface water quality	?	Most soft sand working takes place above the water table and therefore there are minimal impacts on ground water flows.
4. To improve and maintain air quality to levels which do not damage natural systems	-/0	Working in both the north and the south west areas identified is unlikely to lead to significant increases in HGV traffic and therefore no adverse effects on air quality but there will still be some impacts associated with transportation of material
5. To reduce greenhouse gas emissions to reduce the cause of climate change	-/0	As above, working in both the north and south west areas identified is unlikely to lead to significant increases in GHG emissions as the increase in HGV vehicles is not expected to be high. However, there will still be some GHG emission as a result of road transportation
6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change	?	Most soft sand working areas lie outside flood risk zones 2 and 3. Where there is potential for flooding (e.g. small area in Hatfield/Shellington lies within flood risk zone 3), mitigation measures including the sequential test will be required before site allocation.
7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network	-/0	As objective 4 and 5, the levels of traffic generated are not expected to be significant. However, there will be some impacts on the B4030/A260 (Duns Tew) and on the A420, A417, and B4508 (south west sites). Further assessment on access and suitability of roads to accommodate more HGV traffic is recommended at the site selection stage.
8. To minimise negative impacts of waste management facilities and mineral extraction on human health	0/-	Continuing working in both localities will lead to increased cumulative effects on the nearby communities although this can be reduced through mitigation measures at the planning application stage.

9. To minimise the negative impacts of waste management facilities and mineral extraction on local amenity	0/-	As above
10. To protect, improve and where necessary restore land and soil quality	+	Restoration of sites is likely to lead to improved land and soil quality
11. To contribute towards moving up the waste hierarchy in Oxfordshire	0	
12. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment	++	
13. To promote efficient use of natural resources and avoid unnecessary sterilisation of mineral resources	++	
14. To support Oxfordshire's economic growth and reduce disparities across the county	++	

Summary – **Soft sand option**: Identifying two areas of working north and south of the county will help minimise traffic impacts as well as spread the effects of soft sand working more equitably. However, there will be some cumulative effects on communities living close to existing sites and careful consideration should be given when identifying sites and allowing further extraction so as to minimise the overall effects of continued working in these areas. The two areas have different quality sands and this option allows for the working of the two types of sand. Continuing with the existing pattern provides certainty to industry and also takes advantage of existing infrastructure.

Crushed Rock –Crushed rock areas include south of Burford, East of River Cherwell, north of Bicester and east/south east of Faringdon

SA Objectives	Comments	
1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species	-/+	Some areas are constrained by the presence of SSSIs (Ardley and east of Faringdon near Tubney). There are no similar constraints in areas near Hatford and Burford. Restoration has potential to create opportunities for biodiversity.
2. Protect and enhance landscape character, local distinctiveness and historic and built heritage	0/-	None of the areas identified are within AONB, although the Burford area is in close proximity to the setting of the Cotswolds AONB. However, there are SAMs in the area north of Bicester and close to the area identified east of Faringdon). Mitigation measures against adverse effects on these as well as on local visual and landscape effects would be required prior to extraction of materials to avoid adverse effects
3. To maintain and improve ground and surface water quality	?	Impacts on ground water will be tested at the planning application stage

4. To improve and maintain air quality to levels which do not damage natural systems	0/-	If working continues at the current level, impacts on air quality will remain as current but increases in production could lead to negative effects on air quality due to increased traffic
5. To reduce greenhouse gas emissions to reduce the cause of climate change	0/-	As above – increased traffic would lead to increase GHG emissions
6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change	0	None of the proposed areas lies within areas of high flood risk.
7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network	0/-	If working continues at the current level (identified areas are existing limestone working areas), transport impacts will remain as current. However, increased working in any one particular area has potential for negative cumulative effects on the road network and communities near the area
8. To minimise negative impacts of waste management facilities and mineral extraction on human health	-	Continued working in the existing areas will result in cumulative effects over time on the local communities although mitigation measures at the planning application stage can help reduce such impacts and it is envisaged that there will be no significant increase in working in any particular area.
9. To minimise the negative impacts of waste management facilities and mineral extraction on local amenity	-	
10. To protect, improve and where necessary restore land and soil quality	+	Restoration is likely to result in improved land and soil quality where appropriate
11. To contribute towards moving up the waste hierarchy in Oxfordshire	0	
12. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment	++	
13. To promote efficient use of natural resources and avoid unnecessary sterilisation of mineral resources	++	
14. To support Oxfordshire's economic growth and reduce disparities across the county	++	

Summary on principle underlying crushed rock option: The revised crushed rock option would lead to a distribution of effects of crushed rock working in the county therefore potentially preventing adverse effects on a single locality. It also leads to a reduction in the area identified in the north of the county. This option takes advantage of existing infrastructure as well as continuing to provide local employment. This has positive economic benefits. In the long term, there is potential for negative cumulative effects on the communities living near the identified areas. Careful consideration should be given to the exact location of sites and works, relative to housing and other sensitive receptors to militate against potential negative effects.