Annex F: SA/SEA incorporating SFRA and HRA

Appendix 3c: Assessment of Sites in Hambleton and Harrogate Districts (Split)

Joint Minerals and Waste Plan

Sustainability Appraisal Report

Appendix 3: Assessment of Sites

Contents

Sustainability Appraisal Score

Score	Description
++	The Site option is predicted to have higher positive effects on the achievement of the SA objective. For example, this may include a highly significant contribution to issues or receptor of regional or wider significance, or to several issues or receptors of local significance.
m+	The Site option is predicted to have moderate positive effects on the achievement of the SA objective. For example, this may include a positive, but not highly positive contribution to issues or receptor of more than local significance, or to several issues or receptors of local significance.
+	The Site option is predicted to have minor positive effects on achievement of the SA objective. For example, this may include a significant contribution to an issue or receptor of more local significance.
0	The Site option will have no effect on the achievement of the SA objective[1].
-	The Site option is predicted to have minor negative effects on the achievement of the SA objective. For example, this may include a negative contribution to an issue or receptor of local significance.
m-	The Site option is predicted to have moderate negative effects on the achievement of the SA objective. For example, this may include a negative, but not highly negative contribution to an issue or receptor of more than local significance.
--	The Site option is predicted to have higher negative effects on the achievement of the SA objective. For example, this may include a significant negative contribution to an issue or receptor of more than local significance.
?	The impact of the Site option on the SA objective is uncertain.

[1] This includes where there is no clear link between the site SA objective and the site

MJP11 Gebdykes Quarry, Near Masham –ALLOCATED SITE

Site Name	MJP11 Gebdykes Quarry, near Masham (XY: 423503 482933)
Current Use	Agriculture
Nature of Planning Proposal	Extraction of Magnesian limestone as proposed extension to existing quarry
Size	25.8ha north of C133 lane and 1.3ha between existing quarry extraction area and C133 roadside landscape planting. Total: 27.1ha
Proposed life of site	15 years
Notes	Existing quarry site restoration is to agriculture and woodland. The proposed strip of land to the North of the existing quarry will retain the existing screening, the area proposed goes from the boundary of the existing extraction to the boundary of the existing screening. Landscaping will follow along the lines of the existing permission, with low level agricultural restoration.

SA FINDINGS SUMMARISE SIGNFICANT EFFECTS ONLY. A WIDER RANGE OF CONSTRAINTS AND OPPORTUNITIES WERE INITIALLY ANALYSED AND DISTILLED DOWN TO ONLY THOSE WITH THE POTENTIAL TO BE SIGNIFICANT (SEE ALSO SITE ASSESSMENT METHODOLOGY SUMMARY REPORT FOR A FULL LIST OF CONSTRAINTS AND OPPORTUNITIES).

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
1. To protect and enhance biodiversity and geo-diversity and improve habitat	**Proximity of international / national and local designations and key features.** Special Area of Conservation (SAC)/Special Protected Area (SPA): 6km west- North Pennine Moors SPA/SAC; Site of Special Scientific Interest (SSSI): Site is 1.1 km from Mar Field Fen SSSI; SSSI Impact Risk Zone (IRZ): Site is in SSSI IRZ which identifies quarry extensions as development that Natural England would wish / has been consulted on[2]; Site of Importance to Nature Conservation(SINC): Marfield Gravel Pit SINC (c1.16 km), Watlass Moor Lane Grassland (deleted SINC) (c1.16 Km).		✓	✓		- 	0	? +

[2] Natural England notes the modifications to the allocation and has no further comments on site MJP11.

Sustainability Objective	Key Observations on Significance						Score		
		P	T	D	I	S	M	L
connectivity	Priority habitats: Deciduous woodland 10m east of the site, 10m south-east and 20m south-west. No ancient woodland on site or adjacent. Green Infrastructure (GI) network: Site in regional GI Network 'Ure R16'. Although the site is not located within a Living Landscape, it lies circa 60m east of the River Ure Corridor NY10. Site visit noted arable farmland (wheat crops), hedgerows and standalone trees. **Local Effects.** The main area of the site appears to be arable farmland with boundary trees and hedgerows. There is the potential for the site and surrounding area to support nesting birds, badger, foraging bat and brown hare. Impacts upon standalone trees are dependent on their age. Exposing limestone provides an opportunity to create priority calcareous grassland or scrub habitat and possible geological diversity interest, which would strengthen habitat corridors. So this could be encouraged through restoration. The site is a relatively small quarry. One problem that may arise is where quarry operators extract right next to the boundary, which may leave less habitat for cliff nesting birds (though good practice requires appropriate standoff). If restoration is limited in scope, biodiversity offsetting may be appropriate. There is a cumulative impact associated with disturbance to local habitats in relation to the existing Gebdykes quarry and also with the quarrying at Marfield. However, appropriate 'Nature after Minerals' type restoration proposals could provide a long term positive cumulative effect for the area. Plan level / regional / wider effects. Due to the distance and type of development, it is unlikely that there would be any significant effects on Natura 2000 sites. While SSSI IRZ identify Marfield Fen SSSI as a possible receptor to this site, dust would be unlikely to have a significant effect due to							

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
	distance, while hydrological effects could only occur if there were a hydrological link. As this site is likely to be extracted above the water table (based on extraction at the current site3) impacts could only theoretically occur as a result of fuel spills migrating through the bedrock to the aquifer, which can be mitigated for through good site management. Specific reference to potential hydrological impacts on Marfield Fen SSSI can be made within development management measures to be considered in any future application where appropriate. However, should extraction require going below the water table, a hydrological survey will be required.							
2. To enhance or maintain water quality and improve efficiency of water use	**Proximity of water quality / quantity receptors.** Site is in a Nitrate Vulnerable Zone (NVZ) (Surface water and groundwater); Not in or adjacent to a Source Protection Zone; Site is in Humber RBMP in the 'Ings Goit from Source to Burneston Beck' waterbody catchment which has a good overall status and a target of good by 2015. Groundwater: in 'SUNO Magnesian Limestone': Current quantitative quality is good, chemical quality is good. Catchment Abstraction Management Strategy (CAMS): for most of site surface water resources are available at least 50% of time. At low flows new extraction licenses may be more restricted. **Local effects.** Because this site is in a NVZ, local water bodies may be vulnerable during the restoration phase of the project if soils or fertilizers are mismanaged. As with all minerals sites there is a risk of water pollution from fuel spills, however, such occurrences should be readily avoidable through good site management, though we have recorded a negligible effect to reflect this risk and uncertainty, as the onsite process unknown . As this site is likely to be extracted above the water table (see footnote 1), overall the effect is predicted to be neutral during the lifetime of the quarry, with impacts following restoration uncertain		✓	✓		0 ?	0 ?	0 ?

[3] The screening letter for a recent proposal at Gebdyke Quarry confirmed that working stone at 115m AOD would not affect the groundwater level and that the site would remain above the water table. Site MJP10 is adjacent and upslope from this site (Cromwell Wood Estate Company Ltd, 2015. TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (ENGLAND AND WALES) REGULATIONS 2011 Regulation 5(2) - REQUEST FOR A SCREENING OPINION: SURFACE DEVELOPMENT FOR THE EXTRACTION OF PERMIAN LIMESTONE AT GEBDYKE QUARRY, MASHAM. APPLICANT - LIGHTWATER QUARRIES [URL: https://onlineplanningregister.northyorks.gov.uk/register/PlanAppDisp.aspx?recno=9875]

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
	(as restoration is currently unknown). Most impact would be expected to be managed via an environmental permit. **Plan level / regional / wider effects.** None noted.							
3. To reduce transport miles and associated emissions from transport and encourage the use of sustainable modes of transportation	**Proximity of transport receptors.** Site is relatively close to the A1 giving reasonably good access to York, Leeds and Harrogate and Teesside; Access: Confirmed as being the existing Gebdykes Quarry access onto B6268 approximately 250m south of Five Lane Ends junction with means of crossing from MJP11 into current Gebdykes quarry to be confirmed, but may be a conveyor beneath the C133 lane, at a point somewhere between Five Lane Ends and Gebdykes Farm but still to be decided; HGV Vehicles: 64 two-way movements; Light Vehicles: 7 two-way movements. Net change in daily two-way trip generation: Light vehicles: 0; HGVs: +16. Traffic assessment rating: green. Public Right of Way (PRoW): No designated PRoW within site area and access to this site is not affected by a PRoW. Rail: 15.27 km east; Strategic Road: A1 is 8.5 km east (direct) Canal / Freight waterway: 14.2 km south-east. **Local effects.** This site is slightly more distant from the A1 than other sites, though there are relatively few receptors en-route to the A1 as access would utilise the existing Gebdykes Quarry access point onto the B6268 which leads to the B6267 and then onto the A1. As an extension traffic impacts are likely to largely be a continuation of existing impacts rather than a		✓		✓	- ?	- ?	0

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
	new impact (however that could just mean that receptors will have to endure impacts for longer). According to the Highways Assessment the HGV movement is acceptable onto Five Lane Ends, but if existing access is used minor works to improve them may be required[4]. A transport assessment and travel plan will be required (though sustainable transport is not likely to contribute to this site). While the Joint Plan traffic assessment has deemed this site unlikely to have significant effects, our broader assessment under this objective rates the impact as insignificant to minor negative, largely due to the increased distance to markets from this site. Some uncertainty is noted as the site may be affected by a Highway Authority improvement scheme and also because some further reduction of impact could occur through use of a conveyor to connect to the existing quarry. **Plan level / regional / wider effects.** None noted.							
4. To protect and improve air quality	**Proximity of air quality receptors.** Not within a hazardous substances consent consultation zone. Not within 2km of an Air Quality Management Areas (AQMA). Applying the 1km buffer around a site for possible impacts advised by MPS2 shows that it is possible that a number of individual properties including Gebdykes Farm adjacent to site to south-west, Snape Lodge Farm 400m east, Watlass Moor House 540m north-east, High Burton 580m west, Gebdykes Farm 750m south are in range of dust. **Local effects.** Properties to the east are relatively well screened from the site by intervening deciduous woodland, whilst those to the south may be exposed to small scale dust impacts (negligible to minor negative due to distance). Most at risk is the farm adjacent to the south west. There could also be possible dust impacts on adjacent priority woodland. In terms of traffic, the site could result in 71 vehicle movements a day (235,000 tonnes to be transported annually), which if it were to route through nearby settlements, could lead to minor dust / very minor air pollution impacts in combination with other quarries (though this will largely be an extension of existing impacts rather than a new impact, and dust at least is relatively controllable). Uncertain to minor negative.		✓	✓	✓	? -	? -	? -

[4] Further details can be found within the Development Management, Policy D03

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
	Plan level / regional / wider effects. None noted.							
5. To use soil and land efficiently and safeguard or enhance their quality	**Proximity of soil and land receptor.** Agricultural Land Classification (ALC): Grade 3; Greenfield site - no known risk factors in relation to contaminated land. Soilscape: freely draining lime-rich and loamy soils with low carbon but moderate fertility. Soil depth may only be moderate. **Local Effects.** Up to 27.1ha of possible best and most versatile land could be lost during the operational lifetime of this site. However, if restoration is to be to agriculture, some of this farmland loss will not be permanent though low level restoration[5] will be required which may not be suitable for arable use Any proposal for restoration to agriculture should be tested for viability – e.g. relative to the depth of extraction, requirement for inert material and the long term potential to recreate areas of best and most versatile land. Where relevant, development will be subject to aftercare requirements to ensure that a high standard of agricultural restoration can be achieved. Development proposals will be required to demonstrate that all practicable steps will be taken to conserve and manage all on-site soil resources, including soils with environmental value, in a sustainable way. **Plan level / regional / wider effects.** If this site contains best and most versatile land, ultimately there could be an effect on food security as land is taken out of production. On its own 27.1ha is not likely to be a significant effect, though at a plan level effects could also be cumulative.		✓	✓		m - ?	m- ?	- ?
6. Reduce the causes of climate	**Proximity of factors relevant to exacerbating climate change**. Deciduous woodland 10m east of the site, 25m south-east and 20m south-west. Trees and hedgerows noted at site boundaries / field boundaries during site visits; Carbon in vegetation: low (4.72 tC/ha) / Carbon in soils: low (46.83	✓		✓		-	-	- ?

[5] Nitrogen, Phosphate and Potash application are recommended on an annual basis, hence, low Level restoration will not integrate well with surrounding land management.

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
change	tC/ha). **Local effects.** See wider effects below. **Plan level / regional / wider effects.** There would be some loss of vegetation including potentially hedgerows and trees from the site (though a strip of existing screening will be retained), but the site is in an area considered to have low carbon in vegetation and soils, while dust impacts on nearby woodland may reduce its productivity. However, these impacts are small scale and likely to be insignificant. A minor impact would come from traffic from the site which would need to ship limestone off site at a rate of 64 two way HGVs per day (extension of impacts into the future rather than new traffic). The site is reasonably proximal to the strategic road network (A1 8km east) although the site is midway between northern and southern markets. Minor negative impact on climate change anticipated during the operation of the site. In addition, an assessment showing how the design for the proposal has taken into account the need for resilience to climate change factors must be undertaken[6].							
7. To respond and adapt to the effects of climate change	**Proximity of factors relevant to the adaptive capacity[7] of a site.** Surface water flooding low risk (1:1000 (0.1%)) to high risk (1:30 (3.33%)) affects a very small area (<5%). . No English Heritage Network (EHN) adjacent. Catchment Abstraction Management Strategy (CAMS): For most of site surface water resources available at least 50% of time. At low flows new extraction licenses may be more restricted. ALC: Grade 3.	✓	✓	✓		m - ?	m- ?	- ?

[6] Proposals for new mineral extraction at a rate in excess of 75,000 tonnes per annum should be accompanied by an assessment showing how the design for the proposal has taken into account the need for resilience to climate change factors. These thresholds are based on the 75,000 tonnes per annum threshold for strategically significant waste facilities used in the Yorkshire and Humber Waste Position Statement, which has been applied also to minerals output for the purposes of Development Management, Policy D11.

[7] Adaptive capacity is defined as the ability of a system to adjust to climate change to moderate potential; damage or take advantage of opportunities (adapted from CARE International, 2015. Adaptive Capacity [URL: http://www.careclimatechange.org/tk/integration/en/key_concepts/adaptive_capacity.html]

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
	Local Effects. Flooding is not a particular risk to this site and the site is unlikely to impair the movement of species vulnerable to climate changes. In addition, climate change to river flood risk is unlikely to affect the site in the latter part of the plan period. Climate change effects on surface water flooding are likely to increase the extents of the areas at risk and also the depth of flooding for each event respectively. Agriculture contributes to climate change through the release of greenhouse gases and can also contribute to climate change mitigation by reducing greenhouse gas emissions / sequestering carbon / providing ecosystem services, while maintaining food production. Hence, loss of high grade agricultural land will have a minor negative impact over the short and medium term. **Plan level / regional / wider effects** If this site contains best and most Versatile land, ultimately there could be an effect on food security as land is taken out of production. On its own 27.1ha is not likely to be a significant effect, though at a plan level effects could also be cumulative.							
8. To minimise the use of resources and encourage their re-use and safeguarding	**Proximity of factors relevant to the resource usage of a site.** No spatial factors identified. **Local Effects.** This site will contribute to the need for limestone. However, depending on whether it is extracted as crushed rock or whether some building stone is extracted it may to a degree offset recycled materials that could potentially replace them. However, this impact can only be considered at the plan level rather than in relation to an individual site. All that can be said here is that 255,000 tonnes of virgin minerals would be extracted each year which will be unavailable for future use (unless recycled). This works against the SA objective, so it is scored negatively. **Plan level / regional / wider effects.** None noted.	✓		✓		m-	m-	m- ?

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
9. To minimise waste generation and prioritise management of waste as high up the waste hierarchy as practicable	**Proximity of factors relevant to factors relevant to managing waste higher up the waste hierarchy.** No spatial factors identified. **Local Effects.** The site would not deal with waste and no details are provided of how waste would be managed on site. **Plan level / regional / wider effects.** None noted.					0	0	0
10. To conserve or enhance the historic environment and its setting, cultural heritage and character	**Proximity of historic environment receptors.** No Conservation Areas within 1km; Registered Parks and Gardens: None within 2km - nearest Thorp Perrow (Grade 2, ID 1,001,075) 2.3km north-east; Registered Battlefields: none within 2km; World Heritage Sites: none within 2km; Scheduled Monuments: none within 2km; Listed Buildings: 1 listed building within 1km - Dovecote (Grade 2, NHLE no. 1,151,189) 680m north-east. Designed Landscapes- Snape Park 1km east, Clifton Castle 1.1km north-west, The Hermitage 1.7km north, Bellfield Gardens Allotments 1.7km south-west. Historic Landscape Character (HLC) Broad type - Enclosed land / HLC Type - Unknown planned enclosure. Undesignated archaeology in this area includes evidence from metal detected finds, which include material of Roman, medieval and post-medieval date. There are high-status Roman remains in the vicinity to the north-east and south-east at Snape and Well. The deserted medieval settlement of High Burton lies to the immediate west of the site. There is potential for evidence of earlier settlement and activity from the prehistoric period onwards to be present in the area, although current archaeological evidence for this is sparse as there has been limited archaeological fieldwork in this	✓		✓		- ?	- ?	- ?

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
	area to date. **Local effects.** It is thought unlikely that this site would have a significant impact on designated historic environment sites. Further assessment of the potential impact on heritage assets should be carried out and issues raised by Historic England will need to be considered within the identification of the key sensitivities and identification of development management matters to be considered in any future application where appropriate. However, the HLC type of this area is unknown planned enclosure and as the allocation site amounts to about two thirds of the area characterised as such in this location, with significant legibility, it is felt that there will be a negative impact upon HLC of this type. However, there are other areas of unknown planned enclosure to the south west of the site, and so the proposed extraction is unlikely to have a major impact upon the HLC of the immediately surrounding area, although within the site the HLC will become invisible as development will replace an earlier field system, so it is felt that the impact will be a minor negative. There is high archaeological potential for the survival of archaeological remains within the site from the later prehistoric period onwards and, although the site has not been archaeologically evaluated, it is assumed that allocating this site would be likely to cause the loss of these archaeological remains if the site is extracted without mitigation. Archaeological potential is deemed uncertain until such time as an archaeological field evaluation is carried out. **Plan level / regional / wider effects.** None noted.							

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
11. To protect and enhance the quality and character of landscapes and townscapes	**Proximity of landscape / townscape receptors and summary of character.** National Parks / Areas of Outstanding Natural Beauty (AONB): None within 5km - Yorkshire Dales National Park 8km west, Nidderdale AONB 2.7km west; Heritage Coast: None within 5km; ITE land: None within 5km; District level landscape designations: No. National Character Area (NCA): Southern Magnesian Limestone; NYLCA: Landscape Character Type: 'Magnesian Limestone Ridge' (moderate to high visual sensitivity, high ecological sensitivity and high landscape and cultural sensitivity), Local LCA: - Site within area 41 (River Ure Corridor-Charlcot to Aldburgh Hall) of the Harrogate LCA. Tranquillity: Relatively tranquil, though southern part of site is in an area classed as disturbed; Urban intrusion – undisturbed rural area, apart from existing quarry; Light pollution – low (score of 55 on CPRE (2000) scale of 1-255, where 1 represents maximum darkness. **Local Effects.** The assessment below has been revised to take into account an additional 1.3 ha area between the application site and the existing quarry, adjacent to the lane leading from Five Lane Ends to Gebdykes Farm. The intention is to divert the existing overhead power line so that this area can be quarried. The reduction in width of the corridor of planting, hedgerows and original contours along the minor road to Gebdykes Farm is likely to have a detrimental landscape impact. Quarrying is likely to remove most of the belt of screen planting associated with the current quarry which would also have helped to mitigate the effects of the proposed quarry to the north of the lane. The additional effects may not be major negative, so the scoring has not been revised, but the visual impacts of quarrying are likely to be increased, with less scope for mitigation. There are no effects on any designated landscapes and the site is not close to any settlements, so there is no impact on their setting. The site would be a continuation of the existing Gebdykes Quarry, on the other side of a minor road, and there would be cumulative effects on the flattened ridge on which it is situated (not a good location for a quarry given the potential for quarrying to be visible on the skyline (e.g. from river	✓		✓		-	-	-

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
	corridor). However the site is not inter-visible with other quarries. Indeed, the site could potentially increase visual intrusion as it is located on a ridge (albeit a relatively flattened ridge which has shelterbelts and woodland blocks which break up views. A square hole with cliffs would not be desirable. The restoration profile needs to give scope for softening the edges, e.g. through formation of benches & screes, rounded corners, etc. This scope could be limited if the area of extraction of the existing quarry was extended further to the north. The site is partly screened by screening associated with the existing quarry, and there is an existing shelterbelt to the east. However the site will still be visible from the minor roads on two sides affecting some road users approaching Masham. There is also a landform issue as cannot develop a comprehensive scheme for the whole area including the existing quarry (as the landform would be divided by the retention of the road between Five Lane Ends & Gebdykes Farm). This situation would remain, but the road to Gebdykes Farm would be left on a narrow ridge above the quarry voids. There may be cumulative impacts with the quarry to the south. When effects are combined Lime Kiln Lane may be visually impacted. There may also be a loss of field pattern and hedgerows. There could also be impacts on the setting of Gebdykes Farm (early 19th Century development / an undesignated heritage asset), particularly if any buildings are proposed. There may also be visual effects on a right of way to the west. Strips of woodland buffers might be desirable – probably on the top of the quarry to lessen effects. **Plan level / regional / wider effects.** None noted.							

Sustainability Objective	Key Observations on Significance	P	T	D	I	Score S	Score M	Score L
12. Achieve sustainable economic growth and create and support jobs	**Proximity of factors relevant to sustainable economic growth.** Site is relatively close to the A1 giving reasonably good access to York, Leeds and Harrogate and Teesside (though its central location does not align it with one specific market area). **Local Effects.** This site would ultimately result in 3.8 million tonnes of limestone being made available to the market. This would make a significant contribution to the building sector by helping to boost supply of a key building material. It would also directly support jobs in extraction and freight. However, the success of the operation is based on both Potgate (MJP10) and MJP11 (Gebdykes) quarries working together and being able to supply the concrete batching facility on site. **Plan level / regional / wider effects.** Some limestone could potentially be exported beyond the Plan Area.		✓	✓	✓	m+	m+	m+ ?
13. Maintain and enhance the viability and vitality of local communities	**Proximity of factors relevant to community vitality / viability.** Index of Multiple Deprivation (IMD): Mashamshire - Not in most deprived 20%. No villages lie within 1km- the nearest settlement is Masham 1.6km south-west. **Local Effects.** Job opportunities arising from this site are likely to be limited, and while the site would provide a source of limestone which could aid future development, the immediate settlements are unlikely to directly benefit in any significant way. The site is unlikely to either hinder or boost local tourism. Overall any effect is considered to be insignificant. **Plan level / regional / wider effects.** None noted.					0	0	0
14. To provide opportunities to enable recreation, leisure and	**Proximity to recreation, leisure and learning receptors.** Footpath 10.133/10/1 begins circa 30m south-west of the site. No village greens or common land within 500m. **Local Effects.** A short stretch of footpath that is likely to be of local use begins circa 30m south of the site and it is considered that users of this path may experience visual, noise and dust impacts as a result of the allocation. The road to the south may be used by walkers – so they would need to be		✓	✓		-	-	0 ?

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
learning	accommodated. Green Lane, which is assumed to be an unclassified road, may also be used by walkers. Impacts are considered to be minor negative during the operation of the site. **Plan level / regional / wider effects.** As the site is in the Ure Regional Green Infrastructure Corridor access to the restored site should be considered.							
15. To protect and improve the wellbeing, health and safety of local communities	**Proximity to population / community receptors / factors relevant to health and wellbeing.** No villages within 1km (Masham is 1.6km south-west). Individual properties nearby: Gebdykes Farm adjacent to site to south-west, Snape Lodge Farm 400m east, Watlass Moor House 540m north-east, High Burton 580m west, Gebdykes Farm 750m south. No schools within 1km. No hospitals, health centres or clinics within 1km. **Local Effects.** Without mitigation it is possible that noise and dust could affect nearby properties, particularly Gebdykes Farm, so full assessment of these impacts will be needed. Traffic may also add to dust, noise and air pollution at a low level, cumulatively with other quarries and local traffic. **Plan level / regional / wider effects.** None noted.		✓	✓	✓	-	-	0
16. To minimise flood risk and reduce the impact of flooding	**Proximity to flood zones.** Site is in Flood Zone 1. Surface water flooding low risk (1:1000 (0.1%)) to high risk (1:30 (3.33%)) affects a very small area (<5%). However, as extraction is likely to change the topography of the site where flooding occurs across this site is likely to change as extraction progresses. This site is in an area that is not mapped in terms of its susceptibility to groundwater flooding, and hence there is uncertainty about post operational groundwater flood impacts. No reference to groundwater is made in the committee report for the adjacent site[8].					0	0	0

[8] North Yorkshire County Council Environmental Services Committee, 1996. North Yorkshire Minerals Local Plan, Gebdykes Quarry, near Masham [URL: https://onlineplanningregister.northyorks.gov.uk/register/PlanAppDisp.aspx?recno=1591]

Sustainability Objective	Key Observations on Significance					Score		
		P	T	D	I	S	M	L
	This site is not at risk from the 1:20 (5%) flood event[9]. Climate change to river flood risk is unlikely to affect the site in the latter part of the plan period. Climate change effects on surface water flooding are likely to increase the extents of the areas at risk and also the depth of flooding for each event respectively. Sequential Test result – Pass. **Local Effects.** Flooding is not a significant issue. As with all sites above 1ha, a site specific flood risk assessment would need to further examine risk of groundwater flooding, any future climate change risk, and how SuDS could help manage run off. **Plan level / regional / wider effects.** None noted.							
17. To address the needs of a changing population in a sustainable and inclusive manner	**Proximity to factors relevant to the needs of a changing population.** The site does not conflict with any known allocations in other plans. **Local Effects.** The site would make a significant contribution to self-sufficiency in the supply of Magnesian limestone and may also support markets outside of the Plan Area. However, the success of the operation is based on both Potgate (MJP10) and MJP11 (Gebdykes) quarries working together and being able to supply the concrete batching facility on site. **Plan level / regional / wider effects.** The site may support markets outside of the plan area.		✓	✓		+	+	+ ?

[9] In the North West Yorkshire SFRA functional floodplain is defined as undeveloped areas in Flood Zone 3, maps were not available for review at the time of writing. The North West Yorkshire SFRA is in the process of being revised therefore we consider the 1:20 (5%) extent in this location should be considered 'initial' functional floodplain

Cumulative / Synergistic effects[10]	
Planning context	The nearest settlement is Masham 1.6km south-west. Not in the Harrogate Settlement Hierarchy.
Other Minerals and Waste Joint Plan Sites	MJP16 is 1.8km west.
Historic minerals and waste sites	An active quarry (Marfield Quarry) lies 1.5km west. The site is an extension to Gebdykes Quarry immediately adjacent to the south.
Landscape Impacts	The site would be a continuation of the existing Gebdykes Quarry, on the other side of a minor road, and there would be cumulative effects on the flattened ridge on which it is situated (not a good location for a quarry given the potential for quarrying to be visible on the skyline (e.g. from river corridor). However the site is not inter-visible with other quarries. The proposed addition areas of extraction is likely to increase the cumulative visual impacts of the quarries to north and south of the minor road between Five Lane Ends and Gebykes Farm.
Biodiversity Impacts	There is a possible cumulative biodiversity impact associated with disturbance in relation to the existing Gebdykes quarry and also with the quarrying at Marfield. However, appropriate restoration proposals that include measures for biodiversity could provide a long term positive cumulative effect for the area.
Traffic	Traffic may also add to dust, noise and air pollution at a low level, cumulatively with other quarries and local traffic.
Limitations / data gaps	
No significant data gaps. More detailed assessment would be required to fully evaluate a number of effects however. This should be addressed at any subsequent planning application stage.	
Mitigation requirements identified through Site Assessment process	
• Design to mitigate impact on ecological issues, in particular with regard to avoiding impacts on protected species and mitigation of the	

[10] Cumulative effects have been factored into the scoring of each SA objective in the assessment framework.

potential hydrological impacts on Mar Field Fen SSSI

- Design to mitigate impact on best and most versatile agricultural land and to protect high quality soil resources
- Design to include landscaping to mitigate impact on heritage assets (Listed Buildings- Low Mains Farmhouse, Low Burton Hall & a dovecote and archaeological remains, Masham Conservation Areas, Registered Historic Park and Garden) and their settings, and local landscape features
- Design to include site specific flood risk assessment; for an FRA to be satisfactory, it will need to include necessary mitigation, such as compensatory storage, attenuation and SuDS as appropriate
- Design to include landscaping to mitigate impact on users of local roads and rights of way and on the heritage assets in the vicinity (Listed Buildings) and their settings
- Design to include appropriate arrangements for crossing road between existing quarry & MJP11 site and improvements to existing quarry access
- Design to undertake an assessment / proposal has taken into account the need for resilience to climate change factors
- Appropriate arrangements for control of and mitigation of the effects of noise and dust on local residence.
- Appropriate restoration scheme (using opportunities for habitat creation, with well-informed justification for any wetland creation, considering also the potential adverse impacts of new wetland e.g. birdstrike safeguarding zone / referred to Defence Infrastructure Organisation (DIO)), noting that any proposal for restoration to agriculture should be tested for viability – e.g. relative to the depth of extraction and requirement for inert material.