Review of Essex Minerals Local Plan 2014

Assessment of Candidate Sand and Gravel Sites

Appendix F

Flooding Detailed RAG Assessment Methodology and Results

Introduction

The purpose of the Flood Risk RAG assessment is to evaluate the impact of flooding on the Site; including fluvial, pluvial and groundwater, in accordance with Paragraph 159 of the National Planning Policy Framework (NPPF).

Methodology

The methodology used in the assessment of sites, and for the purposes of the Mineral Planning Authority's (MPA) site selection process, has been derived from that of the Strategic Flood Risk Assessment (SFRA). The SFRA adopts a three-staged 'Red-Amber-Green' (RAG) process, as required, ranging from 'low-medium-high' risk. This has been expanded into a five-staged RAG process to allow additional consideration of possible mitigation, 'water compatible' development (within Technical Guidance to the National Planning Policy Framework (2012) – Table 2: Flood risk vulnerability classification), and to allow the detailed comparison of each potential site's merits and demerits. For reference, the aforementioned Table 2 considers sand and gravel workings as 'water compatible' and other sites for mineral working and processing as 'less vulnerable'. Each site's principal submitted use only is considered in regards to 'water compatibility' and it should be acknowledged that ancillary development on site may not fall under this category. Any such issues would be more appropriately addressed at the development management stage.

Within the SFRA, the appraisal of sites refers to flood risk in the form of 'Annual Exceedance Probability' (AEP) to comply with Environment Agency (EA) best practice. AEP details the risk of rainfall and flood events happening each year as a percentage, with a 1 in 20-year storm becoming a 5% AEP event and a 1 in 100-year storm a 1% AEP event. Knowledge of such events per watercourse allows the SFRA, and this assessment, to assess sites accurately in regard to surface water flood risk.

The following sources and actions have been employed within the SFRA, and therefore also this assessment, to ascertain the categories of risk (further details on the data utilised to undertake this can be found within the SFRA):

- Existing flood maps based on a range of national flood modelling data to determine the flood risk grade for allocated sites, as well as GIS analysis using this data set to identify the percentage area of each site falling within each flood zone.

- An assessment against surface water flood risk, fluvial and groundwater flood risk, using mapping / GIS software. The assessment identifies 'risk bandings' to each flood source, with additional details on each specific risk and the impacts to each site.

- Site specific mapping in order to identify recommendations to reduce flood risk for all sites categorised as medium and high-risk within the SFRA.

Related Essex MLP expectation	Opportunity /Constraint	RAG Sensitivity Grade					Sources
Policy Wording (Taken from Adopted Essex Minerals Local Plan 2014)		***RED***	***RED-AMBER***	***AMBER***	***AMBER-GREEN***	***GREEN***	
Policies: **Policy S3- Climate change** Applications for minerals development shall demonstrate how they have incorporated effective measures to…ensure effective adaptation and resilience to future climatic changes, having regard to: 3. National and local principles/ design standards for Sustainable Drainage Systems, including measures to enhance on-site water efficiency and minimise flood impacts both on-site and in relation to adjacent land and 'downstream' land-uses, 4. On-site resilience to unexpected climatic events, 5. The implications of coastal change, where relevant, and, 6. The potential benefits from site restoration and after-use schemes for biodiversity and habitat creation, flood alleviation, and provision of living carbon sinks. **Policy S12- Mineral Site Restoration and After-Use** 5. Where appropriate, proposals shall demonstrate the best available techniques to ensure that: c) Hydrological and hydro-geological conditions are preserved, maintained, and where appropriate, managed to prevent adverse impacts on the adjacent land's groundwater conditions and elsewhere d) Flood risk is not increased Proposals shall demonstrate that there will not be an unacceptable adverse impact on groundwater conditions, surface water drainage and the capacity of soils for future use.	**<u>Flood Risk</u>** *Key considerations:* The NPPF and NPPG regarding the vulnerability of development types to flooding and also which development is considered 'water compatible.' The findings of, and alignment with, the Plan's SFRA (2023) in identifying the level of risk of flooding in regard to surface water, groundwater, and fluvial flooding.	The Site is pre-dominantly (i.e. 50% or over) within FRZ2 or FRZ3 and has high flood risk for BOTH surface water and groundwater (in SFRA) and is not 'water compatible' development. Mitigation to make the Site acceptable would be difficult.	The Site is pre-dominantly (i.e. 50% or over) within FRZ2 or FRZ3 and has high flood risk for EITHER surface water and groundwater (in SFRA). The Site is likely to require high levels of mitigation to make the Site acceptable.	The Site is in part (i.e. 0-49%) within FRZ2 or FRZ3 and / or has high – medium flood risk for EITHER surface water or groundwater (in SFRA) The Site is likely to require medium levels of mitigation to make the Site acceptable.	The Site is in part (i.e. 0-49%) within FRZ2 or FRZ3, and is of low risk of BOTH surface water and groundwater (in SFRA) The Site may require low levels of mitigation to make it acceptable.	The Site is entirely within FRZ1 and has a low flood risk for BOTH surface water and ground-water (in SFRA). The Site is likely to have no impact on flood risk that requires mitigation.	• Existing flood maps (surface water, fluvial, and groundwater flood risk - based on a range of national flood modelling data) • GIS analysis (to identify the percentage area of the sites falling in each flood zone). • The SFRA • Technical Guidance to the National Planning Policy Framework (2012) – Table 2: Flood risk vulnerability classification

Candidate Site Reference A6 - Bradwell Quarry (a)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a ‘high’ potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a ‘low’ groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered ‘water compatible’ development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is a watercourse running from the north to the south and through the entire Site. This creates a risk of flooding with the potential to prevent access to areas of the Site through associated severance. There is therefore a ‘high’ potential for surface water flood risk from runoff flowing across the site to the watercourse as identified within the SFRA.

Regarding groundwater, according to the British Geological Society (BGS) – the organisation who hold geological survey and borehole data for the UK – the Site is not prone to groundwater flooding. There is therefore considered a ‘low’ groundwater flood risk associated with the Site.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘low’

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A22 – Little Bullocks Farm, (a)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- Both of these elements of flood risk are due to a main river being located to the east of the Site.
- The Site is predominantly within Flood Risk Zone 1 (92.2%) and therefore that area of the Site is not at risk from fluvial flooding

Summary of Mitigation

- A 3m buffer strip should be retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site

Results of the technical RAG assessment

The Site is bounded on its eastern side by a main river as classified by the Environment Agency. This results in the Site being classified as 3.1% within FRZ3 and 4.7% within FRZ2. The majority of the Site (92.2%) is within FRZ1, which has no risk of fluvial flooding.

Nevertheless, the presence of the river to the east means that the Site is identified as having a 'high' potential risk of surface water flooding from runoff flowing across the Site to the river, as identified within the SFRA.

Regarding groundwater flood risk, the SFRA considers that the western part of the Site is not prone to flooding, however the eastern half is classed as 'category C' (i.e. prone to flooding) due to the proximity to the river. This results in there being a 'high' identified risk of groundwater flooding for the Site.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should be retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will also apply to the Site

Summary

The Site is in part within FRZ3 and FRZ2, but predominantly within FRZ1. The Site has a ‘high’ flood risk for groundwater, and also a ‘high’ flood risk for surface water. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Roding Beam and Ingrebourne; Upper Roding (to Crispey Brook) catchment area is of a ‘poor’ current status, due to pollution from rural areas, towns, and transport, as well as physical modifications. The potential allocation of both Site A22 and A23 in accumulation could exacerbate those issues which contribute to the catchment’s status – specifically the ‘high’ risk ratings for surface water (A22) and groundwater (A23). Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from any contaminated site runoff and operational vehicles should be mitigated against, and that opportunities to help improve status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A22 and A23 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A23 – Little Bullocks Farm, (b)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will also apply to the Site

Results of the technical RAG assessment

The SFRA identifies that there are some surface water flow paths present along the western border of the Site, with some small areas of ponding present on the Site also. Nevertheless, these are considered insignificant and the SFRA deduces that there is a 'low' surface water flood risk on the Site.

The western part of the Site is not considered to be prone to groundwater flooding, however part of the eastern half of the Site is considered to be Category C. There is therefore the potential for groundwater flooding to occur based on rock type and estimated groundwater level during periods of extended intense rainfall. The SFRA identifies this risk as 'high.'

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'high' flood risk for groundwater. The proposal is considered 'water

compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Roding Beam and Ingrebourne; Upper Roding (to Crispey Brook) catchment area is of a 'poor' current status, due to pollution from rural areas, towns, and transport, as well as physical modifications. The potential allocation of both Site A22 and A23 in accumulation could exacerbate those issues which contribute to the catchment's status – specifically the 'high' risk ratings for surface water (A22) and groundwater (A23). Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from any contaminated site runoff and operational vehicles should be mitigated against, and that opportunities to help improve status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A22 and A23 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A31 – Maldon Road

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1, which is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Restoration of the Site following operational closure should consider the inclusion of flood reduction measures such as NFM and/or tree planting to reduce risks across the wider catchment.
- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Results of the technical RAG assessment

There is a watercourse running from west to east through the entire Site, creating a risk of surface water flooding from runoff flowing across the Site to the watercourse, with the potential to prevent access to certain areas. Surface water flow paths are also present within the southern area of the Site. The SFRA identifies the risk of surface water flooding as 'high.'

There is also an identified 'high' flood risk for groundwater. This risk is mainly classed within 'category C' however there is a large area that is 'category B.' Category B is identified as having the 'potential for groundwater flooding of property situated below ground level: based on rock type and estimated groundwater level during periods of extended intense rainfall' as defined by the British Geological Survey (BGS).

The Site is identified as predominantly within FRZ1 (89.5%); however elements of the Site are also within FRZ3 (4.8%) and FRZ2 (5.7%). Therefore the majority of the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Restoration of the Site following operational closure should consider the inclusion of flood reduction measures such as NFM and/or tree planting to reduce risks across the wider catchment.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Summary

The Site is predominantly within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A47 – Bradwell – Monk's Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is a surface water flow path running north to south with a high (>3.3% AEP) risk of flooding from surface water. This flow path also has a wider flood extent with a low risk (1% AEP to 0.1AEP), as identified within the SFRA. There are also multiple isolated areas of surface water flooding, likely associated with topographical low points or what appears to be field boundaries. Within the SFRA, a 'medium' surface water flood risk rating is identified.

Regarding groundwater, the SFRA identifies that some groundwater flood risk (category C – a limited potential for groundwater flooding to occur, based on rock type and estimated groundwater level during periods of extended intense rainfall) is associated with the centre of the Site, however this is closely attributed to the watercourse / flow path and is likely due to the lower ground levels and high ground water levels in this area. The rest of the Site is not considered to be prone to groundwater. Overall, the SFRA identifies a 'medium' groundwater risk rating for the Site.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A48 – Bradwell – Grange Farm

Amber-Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA

- The Site has been identified as having a 'low' groundwater flood risk.

- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.

- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- No mitigation measures are identified within the SFRA; however it can be assumed that some generic measures contained within the SFRA may also be applicable of any site specific policy should this site be allocated.

Results of the technical RAG assessment

There is a main river flowing west to east to the north of the Site, however this watercourse is outside the Site boundary. During medium and low modelled storm events (1%-0.1% AEP) there are small flow paths on the Site which flow towards the river to the north. These are situated flowing through the northern boundary and eastern boundary. There are multiple areas of isolated surface water flood risk ranging from low risk (>0.1%AEP) to high risk (>3.3%AEP); 11 of these areas are high risk. Nevertheless, overall the SFRA indicates that the Site is of a 'medium' risk regarding surface water flooding.

Regarding groundwater, the SFRA identifies that the BGS does not consider that the Site is prone to groundwater flooding, although there is a small section of 'category C' on the western border, and small sections of 'category B' on the northern border. This amounts to there being an overall 'low' risk of groundwater flooding associated with the Site.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

No mitigation measures are identified within the SFRA; however it can be assumed that some generic measures contained within the SFRA may also be applicable of any site specific policy should this site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site may require low levels of mitigation to make it acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A49 - Colemans Farm - Hill Broad Farm Full Site

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1 however parts of the Site within FRZ2 and FRZ3 associated with the River Blackwater are prone to fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Any potential changes to the porosity of the ground following works and its effects on groundwater levels will need to be mitigated.
- Restoration of the Site following operational closure should consider the inclusion of flood reduction measures such as NFM and/or tree planting to reduce risks across the wider catchment.
- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Results of the technical RAG assessment

The SFRA identifies that the Site has two low risk flow path areas (1%-0.1% AEP) which flow towards a large high risk flow path running east to west north of the Site (this is associated with the River Blackwater). There is also a high-risk flow path along the western boundary, running towards the offsite flow path in the north. There is one high risk (>3.3%AEP) area of surface water flooding within the south-western extent of the Site; this is most likely related to a topographical low point. Overall, the Site is identified as having a 'high' risk of surface water flooding.

Regarding groundwater flood risk, a large proportion of the east of the Site is classified as 'category C' and 'category B' by the BGS; this latter category indicates that there is the potential for groundwater flooding of property situated below ground level. The west of the Site is not prone to groundwater flooding; however the Site is identified as having a 'high' risk for potential groundwater flooding within the SFRA.

The north-western border of the Site along the River Blackwater is within FRZ3 (18%) and also FRZ2 (3%). The remaining majority of the Site is within FRZ1 (79%).

Nevertheless, each year the north-western extent of the Site has a chance of flooding from fluvial sources >3.33% (high risk).

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Any potential changes to the porosity of the ground following works and its effects on groundwater levels.

- Restoration of the Site following operational closure should consider the inclusion of flood reduction measures such as NFM and/or tree planting to reduce risks across the wider catchment.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Summary

The majority of the Site is entirely within Flood Risk Zone 1, although 21% of the Site is within FRZ2 and 3. The Site has a ‘high’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A50 - Colemans Farm - Eastern Extension (Appleford Farm)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1, however 18% is within FRZ2&3 associated with the River Blackwater.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site has four isolated areas of low risk (1% to 0.1% AEP) regarding surface water, which are most likely topographical low points; however, the Site has a wide flow path, flowing north to south, with medium to high risk (>3.3% AEP and >0.1% AEP) in the eastern side of the Site boundary. There is also a flow path on the eastern and northern boundary which encroaches on the Site during any medium to low storm events (<3.33%-0.1% AEP). In consideration of this, the SFRA identifies an overall 'medium' risk rating for surface water flooding.

Regarding groundwater flood risk, the central area of the Site is classed as 'category B' (potential for groundwater flooding), however the majority is classed as 'category C' (limited potential); this is most likely due to areas of low topography and the Site's proximity to the River Blackwater and higher ground water levels. The SFRA therefore identifies an overall risk rating for the Site of 'high' regarding groundwater flooding.

A total of 10% of the Site is within FRZ3, 8% is within FRZ2, and 82% is within FRZ1. The SFRA identifies that the south-eastern corner of the Site is of high risk associated with the River Blackwater (>3.33% AEP). This extent is also at risk of flooding from reservoirs.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within FRZ1, although 18% of the Site is within FRZ 2 and FRZ3. The Site has a ‘medium’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A51 – Colemans Farm – North extension (Hill Broad Farm)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is predominantly within FRZ1, although 43% of the Site is within FRZ3 and FRZ2.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- The implementation of sediment and erosion control measures, e.g., silt fences, sediment basins, and vegetative cover, to prevent soil erosion and sedimentation in water bodies will help reduce the risk of flooding by maintaining proper stormwater management and preventing sediment build-up in waterways
- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site borders the river Blackwater to the west which has an associated surface water flow path which encroaches onto the Site during high-risk storm events (>3.33% AEP). During larger storm events the extent extends further into the Site (3.33% to 0.1% AEP). There are also two low risk (1%-0.1% AEP) flow path areas flowing towards the river Blackwater. Overall, the SFRA considers there to be a 'high' surface water flood risk.

Regarding groundwater flood risk, in the Site's western extent, less than a third of the Site is classed as 'category C' (limited potential for groundwater flooding to occur) which is closely associated with the proximity of the River Blackwater; the rest of the Site is not prone to groundwater flooding. The SFRA considers there to be an overall 'medium' risk of flood regarding groundwater.

The north-western border of the Site, along the River Blackwater, is FRZ3 (37% of the Site) and FRZ2 (6% of the Site). The remainder of the Site is FRZ1 (57%). Associated with FRZ3 and FRZ2, each year the north-western extent of the Site has a chance of flooding from fluvial sources (>3.33% - high risk). This extent is also at risk of flooding from reservoirs when there is also flooding from rivers.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Implement sediment and erosion control measures, e.g., silt fences, sediment basins, and vegetative cover, to prevent soil erosion and sedimentation in water bodies. This helps reduce the risk of flooding by maintaining proper stormwater management and preventing sediment build-up in waterways

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within FRZ1, although 43% of the Site is within FRZ3 and FRZ2. The Site has a ‘high’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A52 – Colemans Farm – Southern Extension

Red-Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly (95%) within FRZ3 and is therefore at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site

Results of the technical RAG assessment

The majority of the area that encompasses the Site has a surface water flood risk extent identified as 'medium' (3.33%-1%AEP). There are also some areas of high risk (>3.33%AEP). Overall, the SFRA considers the overall risk rating of the Site as 'high.'

Regarding groundwater flood risk, the Site is entirely classed as 'category C,' most likely due to the proximity of the River Blackwater and its low topography. The SFRA considers the risk rating as 'high' in regard to groundwater flood risk.

The majority of the Site is within FRZ3 (95%). The SFRA identifies that each year this area has a chance of fluvial flooding from the River Blackwater as >3.3% ('high risk').

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site

Summary

The Site majority (95%) of the Site is within FRZ3, has a ‘high’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. High levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A54 – Whiteheads

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA

- The Site has been identified as having a 'low' groundwater flood risk.

- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.

- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The western boundary border area of the Site is of low to high surface water flood risk (>3.33% to 0.1% AEP), flowing north to south. The south-eastern boundary has similar risk and these two-flow paths meet south of the Site then continue further south. Furthermore, there is a potential ditch outside the border and the Site also borders a significant surface water flow path in addition to a pond/lake. The SFRA considers overall that the Site has a 'medium' risk of surface water flooding.

According to the BGS the Site is not considered to be prone to groundwater flooding. The access track however is affected by 'category B' (potential for groundwater flooding) and 'category C' (limited potential) land. Overall, the SFRA indicates that there is a 'low' risk of groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A55 – Sheepcotes – Southern

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

Along the northern boundary of the Site there is a surface water flow path flowing east to west, which is in the majority high risk (>3.3% AEP.) The Site has four surface water flow paths flowing north towards this, three of which are low risk (1% to 0.1% AEP), and one is high risk (>3.33%). Overall, the SFRA highlights a 'medium' risk rating for surface water.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding however a very small section of the north-western corner is 'category C' (limited potential for groundwater flooding). Overall, there is a 'low' risk rating identified in the SFRA.

The Site is within FRZ1 and as such there is no fluvial flood risk.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'medium' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A56 – Sheepcotes – Western

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a ‘low’ potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a ‘low’ groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered ‘water compatible’ development.

Summary of Mitigation

- No mitigation measures are identified within the SFRA.

Results of the technical RAG assessment

The SFRA identifies that there are few isolated areas of low to high surface water flood risk (>3.33% - 0.1% AEP) on the Site, however the majority of the Site is at very low risk (<0.1%AEP). The SFRA identifies a ‘low’ risk rating for surface water.

According to BGS the majority of the Site is not considered to be prone to groundwater flooding however a very small section of the southwestern corner is ‘category B’ (potential for flooding) most likely associated with the watercourse outside the western boundary. Nevertheless, the SFRA identifies a ‘low’ risk rating for groundwater.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

Although the Site does not have any identified mitigation measures within the SFRA, it can be expected that generic mitigation measures as set out elsewhere within the SFRA may be relevant for any site specific policy in the MLP, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A57 – Chalk End

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The eastern/south-eastern boundary of the Site is formed of a watercourse/ditch and has a surface water flow path flowing south westwards; this is of low to high-risk surface water flooding (>3.3%AEP to 0.1%AEP). The rest and majority of the Site however is not at any significant surface water flood risk. Overall, the SFRA indicates a 'low' risk rating for surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however there is some land within 'category C' along the south-western corner/boundary. The SFRA indicates that there is a 'low' risk of flooding regarding groundwater.

The Site is entirely within FRZ1 and as such there is no fluvial flood risk, although the Site is very close to the flood extents of a main river to the west.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. The Site is likely to have no impact on flood risk that

requires mitigation, although measures are included within the SFRA in consideration of the Site's proximity to a main river.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A58 – Little Smiths

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The SFRA identifies that there is a very small extent of surface water flood risk in the south-east corner of the Site, however the rest of the Site has no significant areas of surface water flood risk. A 'low' risk of surface water flood risk is identified.

Regarding groundwater flood, the BGS identifies that risk varies between 'category B' (potential risk) and 'category C' (limited risk) over the entirety of the Site. The SFRA identifies this as an overall risk rating of 'high.'

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'high' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Chelmer (D/S confluence with Can) catchment area is of a ‘poor’ current status, due to pollution from rural areas, towns, cities, and transport, as well as physical modifications, and wastewater. The potential allocation of both Site A58 and A66 in accumulation could exacerbate those issues which contribute to the catchment’s status – specifically the ‘high’ and ‘medium’ risk ratings for groundwater water (A58 and A66 respectively). Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against.

It should be noted that such effects are raised cautiously, and for both A58 and A66 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A59 – Lowleys Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

There are numerous surface water flow paths flowing south to north across the Site. The majority of these are of low risk (1% to 0.1%AEP); however one of the flow paths includes an area of both medium and high risk (>3.3%AEP to 1%AEP). There are also multiple isolated areas of high risk (>3.3%AEP) and a flow path on the western boundary of the Site which has an area of high risk. Overall, the SFRA identifies a 'high' risk rating for the Site.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however there is some 'category C' land (limited potential for flooding) within the northern extent of the Site. The SFRA identifies the Site as having a 'medium' risk of flooding as a result.

The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A60a - Shellow Cross Farm (A60a) – Chelmsford

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA.
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site contains multiple significant surface water flow paths through the Site eastwards where they are all meet to connect into the nearby main river. They all range from low to high risk however do include significant amounts of high surface water flood risk (>3.3%AEP). Additionally, the access track is crossed multiple times by high surface water flood risk (>3.33%AEP). Overall, the SFRA indicates a 'high' risk rating.

According to the BGS the Site is not considered to be prone to groundwater flooding, and therefore the SFRA identifies a 'low' risk rating.

Although the northern section of the Site borders a main river, the Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'high' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Roxwell Brook catchment area is of a ‘poor’ current status, due to pollution from rural areas, towns, cities, and transport, as well as physical modifications, and wastewater. The potential allocation of both Site A60a and A60b in accumulation could exacerbate those issues which contribute to the catchment’s status – specifically the ‘high’ risk ratings for surface water flooding. Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against. The SFRA adds that opportunities to help improve the catchment’s status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A60a and A60b medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A60b - Shellow Cross Farm (A60b) – Chelmsford

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site contains multiple significant surface water flow paths which through the Site eastwards all meet to connect into the nearby main river. They all range from low to high risk however have significant amounts of high SW flood risk (>3.3%AEP) and the access track is crossed multiple times by an area of high surface water flood risk (>3.33%AEP). Overall, the SFRA identified a 'high' risk rating for surface water flood risk.

According to the BGS the Site is not considered to be prone to groundwater flooding. Therefore the SFRA identifies a 'low' risk rating for groundwater flood risk.

Although the northern section of the Site borders a main river, the Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'high' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water

compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Roxwell Brook catchment area is of a 'poor' current status, due to pollution from rural areas, towns, cities, and transport, as well as physical modifications, and wastewater. The potential allocation of both Site A60a and A60b in accumulation could exacerbate those issues which contribute to the catchment's status – specifically the 'high' risk ratings for surface water flooding. Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against. The SFRA adds that opportunities to help improve the catchment's status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A60a and A60b medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A61 – Heckfordbridge – Site 1

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site includes multiple isolated areas of low surface water flood risk (1% to 0.1%AEP). There exists one flow path of low risk (>0.1%AEP), flowing south to north through the western boundary, and where the flow path meets the Site boundary there is some high surface water flood risk (>3.3% AEP). Nevertheless, the extent is small, and the SFRA indicates that there is a 'low' risk rating overall on the Site.

Regarding groundwater flood risk, the entirety of site varies between 'category A' at the centre of the Site (with potential for groundwater flooding at the surface) and 'category B' (potential for groundwater flooding below ground). There is therefore a 'medium' risk rating identified within the SFRA for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'medium' flood risk for groundwater. The proposal is considered

‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A62 – Heckfordbridge – Site 2

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The Site includes multiple isolated areas of low surface water flood risk (1% to 0.1%AEP). There exists one flow path of low risk (>0.1%AEP), flowing south to north through the western boundary, and where the flow path meets the Site boundary there is some high surface water flood risk (>3.3% AEP). There is also some low (1% to 0.1%AEP) surface water flood risk in the south-eastern corner with small areas of high risk (>3.33%AEP). Nevertheless, the SFRA indicates that there is a 'low' risk rating overall on the Site.

Regarding groundwater flood risk, the entirety of site varies between 'category A' at the centre of the Site (with potential for groundwater flooding at the surface) and 'category B' (potential for groundwater flooding below ground). There is therefore a 'medium' risk rating identified within the SFRA for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A63 – Patch Park, Abridge

Red-Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 3 (79%) and therefore these areas are at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Results of the technical RAG assessment

A main river runs along the border of the Site, flowing east to west. As a result, the Site is includes a large amount of high (>3.33%AEP) and medium surface water flood risk (3.33 to 1%AEP) areas. Additionally, there are some areas of low surface water flood risk (1% to 0.1%AEP) present on the Site. As a result, the SFRA identifies a 'high' risk rating for surface water flood risk.

Regarding groundwater flood risk, the majority of Site is identified as 'category C' (limited potential for flooding). The remainder of the Site (the far eastern side and the access point) is not prone to groundwater flooding. Nevertheless, the extent of category C land is high, and therefore the SFRA identifies a 'high' risk rating for groundwater flooding.

The majority of the Site is within FRZ3 (79%), associated with the River Roding, which has a flood extent of >=3.33%. Land within FRZ2 makes up 10% of the Site, with only 11% in FRZ1. Aside from the risk of flooding associated with the river, there is similarly a risk of flooding from reservoirs both during river flooding and when the river is not in time of flood.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will also apply to the Site.

Summary

The majority of the Site is within FRZ3 (79%) and the Site has a ‘high’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. High levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A64 – Land East of Asheldham Quarry

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

There is one small, low risk surface water flow path (1% to 0.1%AEP), flowing west to east, across the northern extent of the Site; and also one very small flow path of low risk (1% to 0.1%AEP) within the centre of the Site which is closely associated with some ponding (high risk > 3.3%AEP) along the eastern boundary. Both of these flow paths flow east of site. The SFRA considers that overall, there is a 'low' risk of surface water flooding on the Site.

Regarding groundwater flood risk, the majority of the Site is classed as 'category B' (potential for groundwater flooding of property situated below ground level) however the centre of the Site is classed as 'category C' (limited potential of flooding). The north-east part of the Site is not prone to groundwater flooding. Overall, the SFRA indicates that there is a 'high' risk of groundwater flooding on the Site.

The Site is entirely within FRZ1 and there is therefore no risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'high' flood risk for groundwater. The proposal is considered 'water

compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A65 – Land South of Asheldham Quarry

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development

Summary of Mitigation

- The SFRA does not identify any mitigation measures within the SFRA, although it could be expected that generic mitigation measures, as included for other sites, may be applicable for inclusion within any site specific policy should the Site be allocated.

Results of the technical RAG assessment

The majority of the Site is of a very low surface water flood risk (<0.1% AEP). Although there is a very small area of low risk in the south-east corner associated with ponding (1%-0.1%AEP), the Site is not at significant risk. The SFRA identifies a 'low' risk rating as a result.

Regarding groundwater flood risk, the Site is identified within the SFRA as being entirely classed as 'category A' (potential for groundwater flooding to occur at surface). Nevertheless, the SFRA identifies a 'low' overall risk rating regarding groundwater.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA does not identify any mitigation measures within the SFRA, although it could be expected that generic mitigation measures, as included for other sites, may be applicable for inclusion within any site specific policy should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water

compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A66 – White House Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site

Results of the technical RAG assessment

The majority of the Site is at a very low risk (<0.1% AEP) of surface water flooding. Although there are some areas of surface water flood risk on the boundaries of the Site, these are minimal and the Site is not at significant risk of flooding. The SFRA identifies a 'low' risk rating.

Regarding groundwater flood risk, the Site is mainly classed as 'category A' (potential for groundwater flooding to occur at surface), however the corners of the Site are classed as 'category B' (potential for groundwater flooding of property situated below ground level) and also 'category C' (limited potential for groundwater flooding to occur). Overall, the SFRA identifies a 'medium' risk rating regarding groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Chelmer (D/S confluence with Can) catchment area is of a ‘poor’ current status, due to pollution from rural areas, towns, cities, and transport, as well as physical modifications, and wastewater. The potential allocation of both Site A58 and A66 in accumulation could exacerbate those issues which contribute to the catchment’s status – specifically the ‘high’ and ‘medium’ risk ratings for groundwater water (A58 and A66 respectively). Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against.

It should be noted that such effects are raised cautiously, and for both A58 and A66 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A67 – Church Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There are some areas of surface water flood risk on the boundaries of the Site however these are minimal and are low risk (1%-0.1%AEP). Further, the access road has a small section which has a surface water flow path running across it with a high surface water flood risk (>3.33%AEP) along with an area of high-risk ponding at the end. Nevertheless, the SFRA identifies that overall the Site is of a very low surface water flood risk (<0.1% AEP) and the Site has a 'low' risk rating.

Regarding groundwater flood risk, the west of the Site is not prone to groundwater flooding, however the east and centre (representing approximately two thirds of the Site is classed as 'category B' (potential for groundwater flooding of property situated below ground level). The SFRA adds that the access route however is classed as 'category C' (limited potential for groundwater flooding) and should be ensured to designed in a way that access is not lost. Overall, the SFRA highlights a 'medium' overall risk rating.

The previously mentioned small area on the access road is also FRZ3 and makes up 1% of the Site. The SFRA concludes that 'whilst this technically makes the Site a medium risk, as the risk is mainly constrained to the access road no further analysis has been undertaken.' The reminder of the Site is FRZ1.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Summary

The Site is predominantly within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A68 – Crabtree Farm

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a ‘low’ potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a ‘low’ groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered ‘water compatible’ development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation

Results of the technical RAG assessment

There are multiple areas of low surface water flood risk across the Site (1%-0.1% AEP) however these are isolated areas of ponding most likely to do with topographical low points. The SFRA indicates that this corresponds to a ‘low’ surface water risk rating.

According to the BGS the Site is not considered to be prone to groundwater flooding. This corresponds to a ‘low’ risk rating for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A69 – Frating Hall

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation

Results of the technical RAG assessment

There are some localised areas of low surface water flood risk (1%-0.1% AEP)) throughout Site and some of medium risk (<3.33%-1%AEP). There are also the beginnings of a low surface waterflow path (1%-0.1%AEP) on the western boundary of the Site which flows east to west (and off site). Nevertheless, the majority of the Site is at very low risk (<0.1% AEP) and the SFRA indicates a 'low' risk rating.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding however there is a small extent of the Site's south-eastern corner which is classed as 'category C' (limited potential for groundwater flooding to occur). Overall, the SFRA indicates a 'low' risk rating for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A71 – Lodge Farm

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a ‘low’ potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a ‘low’ groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered ‘water compatible’ development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation

Results of the technical RAG assessment

The entirety of the Site is at very low surface water flood risk (<0.1% AEP) and therefore the SFRA indicates that the Site is of a ‘low’ risk rating.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however the eastern border and the north of the Site is classified as ‘category A’ (potential for groundwater flooding to occur at surface). Nevertheless, the SFRA indicates a ‘low’ risk rating for groundwater flooding.

The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A72 – Martells – Southern Extension

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation

Results of the technical RAG assessment

There is one area of ponding centrally with high surface water flood risk (>3.3% AEP) to low surface water flood risk (1%-0.1%AEP). This latter extent is greater however due to the nature of mineral workings, if all ancillary buildings and storage areas are kept outside of area of risk then carefully made topographical changes should mitigate any potential impacts. The SFRA highlights that similar surface water flooding can be found at the end of the access track. A 'medium' risk rating for surface water flooding is raised in the SFRA.

According to the BGS the Site is not considered to be prone to groundwater flooding. The SFRA indicates a 'low' risk rating as a result.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'medium' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A73 – Martells – Western Extension

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation

Results of the technical RAG assessment

The entirety of the Site is at a very low surface water flood risk (<0.1% AEP), aside from the beginning of the access track which has an area of high surface water flood risk (>3.33%AEP). Overall, the SFRA considers that there is an overall 'low' risk rating regarding surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however there is land is classed 'category B' (potential for groundwater flooding of property situated below ground level) and 'category C' (limited potential for groundwater flooding to occur) crossing the Site. Overall, the SFRA concludes a 'medium' risk rating for the Site in regard to groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'medium' flood risk for groundwater. The proposal is considered 'water compatible' development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A74 – Thorrington Hall

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The Site includes one flow path associated with a ditch which runs from the north to the south which consists of high surface water flood risk (>3.33%AEP). This path flows towards a pond which similarly has a high surface water flood risk (>3.33%AEP). From the pond there is an additional low risk flow path (1%-0.1%AEP) flowing eastwards, which is associated with a ditch/watercourse. There is a further low-risk flow path flowing north to south through the southern border, and some very small, isolated areas of ponding with a high surface water risk (>3.3% AEP) on the western boundary. Overall, the SFRA indicates a 'medium' risk rating.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding except for the Site's western extent which is classed as 'category A' (potential for groundwater flooding to occur at surface); and the Site's north-eastern corner which is classed as both 'category B' (potential for groundwater flooding of property situated below ground level) and in small parts 'category C' (limited potential for groundwater flooding to occur). Overall, the SFRA indicates that the Site has a 'medium' risk rating for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A75 – Land at Orford

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The broad area has one low risk flow path (1%-0.1%AEP) with a small section at medium surface water flood risk (3.33% to 1% AEP), east to west, across a short section of the Site. This is along a watercourse which flows to a main river watercourse on the western side of Cambridge Road. This watercourse and flow path is not within the Site boundary. Overall, the SFRA indicates a 'medium' risk rating for surface water flooding.

Regarding groundwater flood risk, the majority of the Site is classed as 'category A' (potential for groundwater flooding to occur at surface); however the eastern border of the Site has a small extent of 'category C' (limited potential for groundwater flooding to occur) and 'category B' (potential for groundwater flooding of property situated below ground level). Overall, the SFRA indicates a 'low' risk rating for groundwater flooding.
The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Stanstead Brook catchment area is of a ‘poor’ current status, albeit the reasons for this are unknown. The potential allocation of both Site A75 and A76 in accumulation could exacerbate any issues which contribute to the catchment’s status – specifically the ‘medium’ risk ratings for surface water flooding. Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against. The SFRA adds that opportunities to help improve the catchment’s status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A75 and A76 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A76 – Elsenham

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The northern boundary of the Site includes a surface water flow path which flows east to west and has some high to medium (>3.33% to 1% AEP) surface water flood risk associated with it. There are also some low surface water flood risk areas around the Site as well as on the southern boundary. The majority of the Site is of very low risk (<0.1%AEP) however. Despite this, the SFRA indicates a 'medium' overall risk rating for surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding except for the north-western corner which includes a small section of land classed as 'category C' (limited potential for groundwater flooding to occur). Overall, the SFRA indicates a 'low' risk rating for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

The SFRA identifies that the Stanstead Brook catchment area is of a ‘poor’ current status, albeit the reasons for this are unknown. The potential allocation of both Site A75 and A76 in accumulation could exacerbate any issues which contribute to the catchment’s status – specifically the ‘medium’ risk ratings for surface water flooding. Regarding the catchment status and the impact of allocating sites in this area, the SFRA raises the potential of pollution from contaminated site runoff and operational vehicles, which should be mitigated against. The SFRA adds that opportunities to help improve the catchment’s status through site restoration should be explored.

It should be noted that such effects are raised cautiously, and for both A75 and A76 medium levels of mitigation are highlighted to make the acceptable in their own right.

Candidate Site Reference A77 – Westward Extension to Highwood Quarry

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The Site has one main surface water flow path running north to south through the north-eastern and northern boundary with areas of both medium risk (3.33% to 1% AEP) and high risk (>3.3% AEP). There is also a low risk (1% to 0.1%AEP) flow path flowing east towards this main flow path. There are also isolated areas of surface water with medium risk (3.33% to 1% AEP) associated with a track on the Site. Overall, the SFRA identifies that the Site has a 'high' risk regarding surface water flooding.

Regarding groundwater flood risk, central areas of the Site are classed as both 'category B' (potential for groundwater flooding of property situated below ground level) and 'category C' (limited potential for groundwater flooding to occur), however the remainder of the Site is not considered to be prone to groundwater flooding. Overall, the SFRA indicates a 'medium' risk of groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A79 – Crown Quarry – North of Wick Lane

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The Site includes a small amount of surface water flood risk in the north-eastern corner (predominantly 1%-0.1% AEP) however it is not considered significant. This is associated with a larger off-site flow path. Overall, the SFRA indicates a 'low' risk rating for surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding except for an area at the southern border of the Site which is classed as 'category C' (limited potential for groundwater flooding to occur). Overall, the SFRA indicates that there is a 'medium' risk associated groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'medium' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A80 – Crown Quarry – South of Wick Lane

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The SFRA indicates that there is no surface water flood risk associated with the Site, and therefore a 'low' risk rating for surface water flooding.

According to the BGS the eastern half of the Site is not considered to be prone to groundwater flooding, however the western half of the Site is classed as 'category C' (limited potential for groundwater flooding to occur). The SFRA indicates that there is an overall 'high' risk rating regarding groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'high' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A82 – Colemans Farm – Elm Springs Extension

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There lies an area of significant surface water flood risk along the western boundary of the Site, ranging from a 3.33% AEP storm event to the 0.1% AEP storm event. This is due to a watercourse which borders then enters the Site. As the risk is in and around the watercourse and mainly constrained to the edge of the Site it is not considered high risk and can be mitigated against relatively easily without impacting the potential use of a mineral working. The SFRA indicates an overall 'medium' risk rating regarding surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding and only small extents of the eastern corners of the Site are classed as 'category C' (limited potential for groundwater flooding to occur) and 'category B' (potential for groundwater flooding of property situated below ground level). The SFRA indicates an overall 'low' risk rating regarding groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A83 – Colemans Farm – Hole Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is some surface water flood risk cutting across the centre of the Site which is associated with ditches/watercourses. This risk is mainly constrained to the watercourse which appears to discharge into the River Blackwater. The risk ranges from 3.33% AEP to mainly 0.1% AEP. The SFRA indicates a 'medium' risk rating for the Site.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however the northern third of the Site is partly classed as 'category C' (limited potential for groundwater flooding to occur) and mainly classed as 'category B' (potential for groundwater flooding of property situated below ground level). The SFRA indicates an overall 'medium' risk rating for groundwater flooding as a result.

The Site borders the River Blackwater and therefore some parts of the southern extent are within FRZ2 (5.2%) and FRZ3 (0.3%). This extent is also at risk of flooding from reservoirs when there is also flooding from rivers. The majority of the Site is however in FRZ1.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A84 – Colemans Farm – Appleford Farm North Extension

Red-Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'high' groundwater flood risk.
- The Site is predominantly within FRZ3 (56%) and therefore is at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The majority of the Site falls within FRZ3 (56%), therefore there is a significant risk of fluvial flooding from the River Blackwater (>3.33%AEP) which is present on the Site. A further 9% of the Site falls within FRZ2. The Site is similarly at risk of flooding from reservoirs both during river flooding and when the river is not flooding.

The majority of the Site is at significant surface water flood risk (up to >3.33%AEP). This flood risk is associated to watercourses and proximity to the River Blackwater and can be found centrally and towards the southern and western boundaries of the Site. The SFRA indicates a 'high' risk rating for surface water flooding.

According to the BGS the centre of the Site is not considered to be prone to groundwater flooding, however the remainder of the Site is classed as 'category C' (limited potential for groundwater flooding to occur). The SFRA indicates a 'high' risk rating for groundwater flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Summary

The Site is predominantly within FRZ3 (56%), has a ‘high’ potential for surface water flood risk, and a ‘high’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. High levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A85 – Martells – North of Frating Road (East)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There are three main areas shown to be at of surface water flood risk within the southern extent of the Site. These areas look to be varying extents of ponding rather than an identified flow path and are also present down and upstream. Within the Site, the extents and level of risk get greater the further south/closer to the southern border they get, with the southernmost area having significant risk during the 3.33%AEP storm event. Overall, the SFRA indicates a 'medium' risk rating regarding surface water flooding.

According to the BGS the Site is not considered to be prone to groundwater flooding. The SFRA identifies this as a 'low' risk.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'medium' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered

‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A86 – Martells – North of Frating Road (West)

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There are some small negligible areas of ponding around the Site which are mainly associated with storm events between 1% and 0.1% AEP. There is however a larger area of ponding covering the centre of the Site (mainly at 0.1% AEP, although smaller parts are at risk of 3.33%-1% AEP). Due to the nature of mineral sites and the fact that this is likely associated with a topographical low point and not a watercourse, a 'medium' risk rating is identified within the SFRA.

According to the BGS the Site is not considered to be prone to groundwater flooding. This is reflected in a 'low' risk rating for groundwater flooding within the SFRA.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'medium' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A87 – Martells – East of Slough Lane

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The Site is likely to have no impact on flood risk that requires mitigation.

Results of the technical RAG assessment

There are some small, localised areas of surface water flood risk (0.1%-1% AEP) on the Site, most likely ponding due to a topographically lower areas. These are not linked to any flow paths and due to the nature of mineral workings would not be considered significant as earthworks will likely be occurring. The SFRA identifies a 'low' risk rating as a result.

According to the BGS the Site is not considered to be prone to groundwater flooding. A 'low' risk rating for groundwater flooding is identified in the SFRA.

The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a 'low' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is considered 'water compatible' development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A88 – Gurnhams Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Results of the technical RAG assessment

Several small, localised areas of surface water flood risk (0.1%-3.33% AEP) are present on the Site, most likely ponding due to a topographically lower areas. These are not linked to any flow paths and due to the nature of mineral working would not be considered significant as earthworks will likely be occurring. The majority of these localised areas are on the borders of the Site; therefore it should be ensured that flood risk is not increased off site. For this reason, the SFRA identifies a 'medium' risk rating for surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however the north-eastern corner has a small extent of land classed as 'category C' (limited potential for groundwater flooding to occur). Nevertheless, the SFRA identifies a 'low' risk rating regarding groundwater flooding.

The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A89 – Covenbrooke Hall Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA

- The Site has been identified as having a 'low' groundwater flood risk.

- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.

- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Results of the technical RAG assessment

The Site contains several small, localised areas of surface water flood risk (0.1%->3.33% AEP), which are most likely ponding due to topographically lower areas. This is not linked to any flow paths and due to the nature of mineral workings would not be considered significant as earthworks will likely be occurring. There is also a small flow route to east associated with an offsite watercourse (0.1.-1% AEP) however this is mainly along the border of the Site and is not considered significant. This watercourse should be maintained and kept clear to reduce the risk of surface water flood risk. The SFRA identifies a 'medium' risk rating regarding surface water flooding.

According to the BGS the southern half of the Site is not considered to be prone to groundwater flooding, however the remainder of the Site is a mix of land classed as 'category A' (potential for groundwater flooding to occur at surface) and 'category B' (potential for groundwater flooding of property situated below ground level). Nevertheless, the SFRA identifies a 'low' risk rating regarding groundwater flooding.

The Site is entirely within FRZ1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The SFRA indicates that no mitigation measures are required, however it could be assumed that generic mitigation measures included elsewhere within the SFRA would be applicable of any site specific policy, should the Site be allocated.

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have no impact on flood risk that requires mitigation.

Cumulative impact
No cumulative effects are identified at this stage.

Candidate Site Reference A90 – Rayne Quarry – Northern Extension

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA

- The Site has been identified as having a 'low' groundwater flood risk.

- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.

- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is significant surface water flood risk in the north of the Site which is associated partly with the presence of a watercourse. The main surface water flood risk area cuts through the Site heading in a north-easterly direction and, outside of the extent of the mapped watercourse, is shown to be at between 1% and 0.1% AEP. There is also some additional surface water flood risk shown to be contributing along the northern boundary of the Site, heading east. Where the watercourse begins (on the border of the Site) the risk is also shown to be at 3.33% AEP. The SFRA identifies a 'high' risk rating for surface water flooding as a result.

Regarding groundwater, according to the British Geological Society (BGS) – the organisation who hold geological survey and borehole data for the UK – the Site is not prone to groundwater flooding. There is therefore considered a 'low' groundwater flood risk associated with the Site.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A91 – Land at Chignal St James

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1 (98.5%) and this area is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

A large part of the access track forming part of the Site is affected by surface water flood risk ranging from <3.33% AEP to 0.1% AEP. Within the main body of the Site, there is a surface water flood risk overland flow heading south towards a main river. This has flood risk as high as 3.33% AEP associated with it and it cuts through the western side of the Site. Overall, the SFRA identifies that there is a 'medium' surface water flood risk.

According to the BGS the Site is not considered to be prone to groundwater flooding, however the aforementioned access track is classed as variously 'category A' (potential for groundwater flooding to occur at surface), 'category B' (potential for groundwater flooding of property situated below ground level), and 'category C' (limited potential for groundwater flooding to occur). These areas have risk associated with them, most likely due to the main river. Therefore, consideration should be given to raising this track as it is important to maintain all access routes. Overall, the SFRA identifies a 'medium' risk rating for groundwater flooding.

The SFRA identifies that part of the Site's access road is crossed by a main river and is consequently in FRZ2 (0.5%) and also FRZ3 (1%). Despite this the majority of the Site is not at fluvial flood risk.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within Flood Risk Zone 1 (98.5%), has a ‘medium’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A92 - Land at Pattiswick Hall Farm – Small Site

Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is some surface water flood risk along the northwest border of the Site; this is associated with a watercourse and appears to mainly be contained within the extent of the watercourse. There are also some small areas of overland flows associated with the 0.1% AEP storm event, however the SFRA concludes that these can easily be mitigated against and are not considered to be significant. The SFRA identifies a 'low' risk rating for surface water flooding as a result.

According to the BGS the Site is not considered to be prone to groundwater flooding aside from central areas, which are classed as 'category A' (potential for groundwater flooding to occur at surface), and 'category B' (potential for groundwater flooding of property situated below ground level). Overall, the SFRA identifies a 'low' risk rating for groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘low’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. The Site is likely to have impacts that are easily mitigated regarding surface water flood risk.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A93 - Land at Pattiswick Hall Farm – Full Site

Amber-Green

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1 and those areas are not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The northern boundary of the Site is shown to be at risk of surface water flooding (>3.33%AEP to 0.1%AEP) however this is associated with watercourses on the border which do not overly encroach on the majority of the Site. The SFRA identifies a 'low' risk rating regarding surface water flooding.

Regarding groundwater flood risk, the Site has land with classed as 'category A' (potential for groundwater flooding to occur at surface) and 'category B' (potential for groundwater flooding of property situated below ground level) in central areas, with the northern and south extents not being prone to groundwater flooding. Overall, the SFRA considers that the Site has a 'low' risk of groundwater flooding.

The Site borders a tributary of the River Blackwater and therefore the north-west border has some extent within FRZ2 (0.04%) and FRZ3 (0.2%).

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within Flood Risk Zone 1 (99.76%), has a 'low' potential for surface water flood risk, and a 'low' flood risk for groundwater. The proposal is

considered ‘water compatible’ development. Low levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A94 – Land at Highfields Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The Site has significant surface water flood risk, due to the presence of three main watercourses running south to north through the Site. All of these watercourses have a significant amount of surface water flood risk >3.33%AEP. There are also some other areas of 0.1%AEP surface water flood risk which are a part of overland flows. Overall, the SFRA identifies a 'high' risk rating for surface water flooding.

According to the BGS the majority of the Site is not considered to be prone to groundwater flooding, however there are multiple areas of land classed as 'category C' (limited potential for groundwater flooding to occur) and 'category B' (potential for groundwater flooding of property situated below ground level) throughout the Site. Overall, the SFRA identifies a 'medium' risk rating regarding groundwater flooding.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘high’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A95 – Land at Bellhouse Farm South

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'low' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is predominantly within Flood Risk Zone 1 (96.85%) and this area is not at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

There is some minor surface water flood risk (0.1-1% AEP) associated with the Site's south-western border; most likely this is due to the proximity of the main river however the remainder of the Site has a very low surface water flood risk. The SFRA considers an overall 'low' surface water flood risk.

Regarding groundwater flood risk, areas classed as 'category C' (limited potential for groundwater flooding to occur) can be found on the Site's western border; this is closely associated with the watercourse. Moving east, this risk decreases from 'category B' (potential for groundwater flooding of property situated below ground level) to 'category A' (potential for groundwater flooding to occur at surface). Land within this latter category occupies half of the Site. The SFRA indicates a 'medium' risk rating for groundwater flooding.

A main river (Roman River) runs along the border of the Site and during times of times of flooding the Site is shown to be partially within FRZ2 (0.45%) and FRZ3 (2.7%), experiencing fluvial flood risk of between 1% and 3.33% AEP. The SFRA concludes that overall flood risk is deemed minor if that of the Roman River is mitigated against and not negatively impacted.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within Flood Risk Zone 1 (96.85%), has a ‘low’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference A96 – Rayne Quarry – Southern Extension

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'high' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'medium' groundwater flood risk.
- The Site is predominantly within FRZ1 (58.7%), however 35% of the Site is with FRZ3 and is at risk from fluvial flooding.
- The intended use of the Site (sand and gravel working) is considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

Areas of significant surface water flood risk are present throughout the Site due to watercourses and the presence of a main river (River Ter) (up to >3.33%AEP). Surface water flood risk affects the majority of the Site and is considered significant. The SFRA indicates a 'high' risk rating for surface water flooding.

Regarding groundwater flood risk, the southern extent of the Site is classed as 'category C' (limited potential for groundwater flooding to occur). This is again related to the River Ter; however the remainder of the Site is not considered to be prone to groundwater flooding. Overall, the SFRA considers a 'medium' risk rating for groundwater flooding.

A main river (River Ter) runs through the Site, west to east, culminating in 35% of the Site being within FRZ3 and 6.3% within FRZ2; these areas of the Site are at risk of fluvial flooding to the extent 1% - >=3.33%.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- A 3m buffer strip should retained adjacent to the main river to allow access for maintenance
- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is predominantly within Flood Risk Zone 1 (58.7%), has a ‘high’ potential for surface water flood risk, and a ‘medium’ flood risk for groundwater. The proposal is considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.

Candidate Site Reference D7 – Land at Pond Farm

Amber

Key findings of the assessment are as follows:

- The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA
- The Site has been identified as having a 'low' groundwater flood risk.
- The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.
- The intended use of the Site (a transhipment site) is not considered 'water compatible' development.

Summary of Mitigation

- Generic mitigation measures as set out in the SFRA will apply to the Site.

Results of the technical RAG assessment

The is some surface water flood risk associated with the western border of the Site and also the centre of the Site. This flood risk mainly ranges from 3.33%-0.1%AEP and is associated with watercourses. The SFRA considers that it is important to ensure that these watercourses are kept clear and maintained so that flood risk is not increased on site or off-site. Overall, the SFRA indicates an overall 'medium' risk rating for surface water flooding.

The majority of the Site is not considered to be prone to groundwater flood risk, however there is a small section of land classed as 'category B' (potential for groundwater flooding of property situated below ground level) and also 'category C' (limited potential for groundwater flooding to occur) on the Site's north-eastern border. The SFRA considers an overall 'low' risk rating for the Site.

The Site is entirely within Flood Risk Zone 1. Therefore the Site is not considered to be at a risk of fluvial flooding.

Mitigation Measures

The following considerations must be made for a site-specific FRA during the planning process (if permission has not yet been granted) and during the operation and restoration phases.

- Generic mitigation measures as set out in the SFRA will apply to the Site

Summary

The Site is entirely within Flood Risk Zone 1, has a ‘medium’ potential for surface water flood risk, and a ‘low’ flood risk for groundwater. The proposal is not considered ‘water compatible’ development. Medium levels of mitigation are likely to be required to make the Site acceptable.

Cumulative impact

No cumulative effects are identified at this stage.