

Leigh Flood Storage Area Expansion Scheme

Environmental Statement Non-Technical Summary – August 2020

This Non-Technical Summary (NTS) summarises the findings of the Environment Impact Assessment (EIA) undertaken for the Scheme – the full detail is presented in the Environmental Statement prepared for the project. The NTS forms part of the Environmental Statement for the Scheme but is also available as a separate document. The NTS provides:

- A description of the Scheme
- An outline of the main alternatives considered and
- A summary of the main effects which the project is likely to have on the environment and the mitigation measures proposed

Introduction

The Environment Agency is seeking to develop a Scheme to reduce flood risk to properties in the River Medway catchment downstream of the Leigh Flood Storage Area, west of Tonbridge in Kent.



Figure 1: Scheme location

The Scheme will reduce flood risk by creating additional storage capacity within the Leigh Flood Storage Area.

The Scheme involves works to allow an increase in the maximum water storage level from 28.05m to 28.60m (Above Ordnance Datum – AOD) – an increase of 0.55m.

Storing water to 28.60m AOD will reduce flood risk to over 1,400 homes and 100 businesses in Tonbridge and Hildenborough.

Grid Reference for the Control Structure: (6 figure) TQ563461 – Latitude, Longitude (decimal) 51.192920 , 0.23657620



Photo 1 adjacent shows the Flood Storage Area in operation during a recent flood event, with the Main Embankment and Control Structure in the foreground.

The Scheme

The existing Main Embankment at Leigh is already high enough to accommodate the proposed increase in water level and allow more water to be held within the storage area. The maximum level at which water can be stored at Leigh is set by legislation – within the River Medway (Flood Relief) Act 1976. Increasing the water storage level requires a change to this legislation.

This is being addressed through a separate mechanism to the planning application for the Scheme.

Photo 1: Leigh FSA during operation in February 2020 – Main Embankment and Control Structure visible in the foreground

Although no changes are required to the height of the Main Embankment, work is required to raise the Cattle Arch and Pumping Station embankments near Leigh, upstream of the Control Structure, to ensure that the increase in water level does not cause flooding in the village of Leigh. The Scheme also includes proposals to prevent wind-driven waves eroding these upstream embankments. Figure 1: 'Scheme Overview Plan' below, shows the location of the works proposed and associated mitigation and enhancement areas (Areas 1-8).

As part of the Scheme, the Environment Agency is also installing erosion protection on the crest, downstream slope, and toe of the Main Embankment. These 'Measures in the Interests of Safety' – or 'MIOS' – works are a legal requirement to ensure that the Main Embankment is protected from erosion should water levels ever exceed the maximum storage level. In the event that the FSA reaches its capacity and the maximum operating water level is reached, the operating procedure would remain unchanged: the gates would be operated to keep the stored water at a safe level

The MIOS erosion protection materials will be covered with soil and then re-seeded with grass cover so that the appearance of the Main Embankment will not change. Upgrading and maintenance works are also planned to the Control Structure itself. This will include works to the gates, replacement kiosks and other mechanical/electrical elements.

Alternatives considered

During scheme development a number of options were considered, including continuing to operate the Storage Area as it is currently – and various increases in water level to increase storage capacity (including increases to 29.0m, 28.85m and 28.6m AOD – 28.6m AOD eventually being taken forward as the preferred design). If capacity within the Flood Storage Area is not increased, there would be a greater risk of flooding to properties in Tonbridge because of extreme events in the future. There would also be a greater risk of disruption to roads and transport as a result of flooding if existing levels were maintained.

The decision to take forward the option to increase the water level to 28.6m AOD was taken. It will increase the number of homes benefitting from a reduction in flood risk, but will not, require major work to the Main Embankment. It also means that large scale earthworks to protect the railway embankment are avoided. This has associated environmental benefits in that large volumes of fill material are not needed (noise and dust impacts associated with transporting fill material are also avoided) and valuable habitat on the existing railway embankments can be retained.

Construction programme and proposed compounds

Construction of the Scheme is planned to commence in spring 2021 and continue until 2023. Works will be undertaken simultaneously at different locations to reduce the overall construction programme.

It is planned that the smaller scale works such as those proposed at the Cattle Arch and the Pumping Station Embankment near Leigh will be completed during the first year of construction (2021). The MIOS works to the Main Embankment are larger in scale and will therefore be carried out over 3 consecutive seasons (2021 to 2023). The Control Structure will remain operational throughout the duration of the work. Works will be generally be carried out between spring and autumn (March to October) when ground conditions will be drier and more favourable and the likelihood of needing to operate the Control Structure will be lower. The Main Site Compound for the works will be set up next to the Control Structure, off Powdermill Lane.

Two additional compounds will be set up, one in Haysden Country Park (off Lower Haysden Lane – to service the MIOS works to the Main Embankment to the south of the railway) and the other near Leigh (off Ensfield Road – to service the Pumping Station and Cattle Arch Embankment sites).

The proposed compound locations are shown on Figure 2 below.

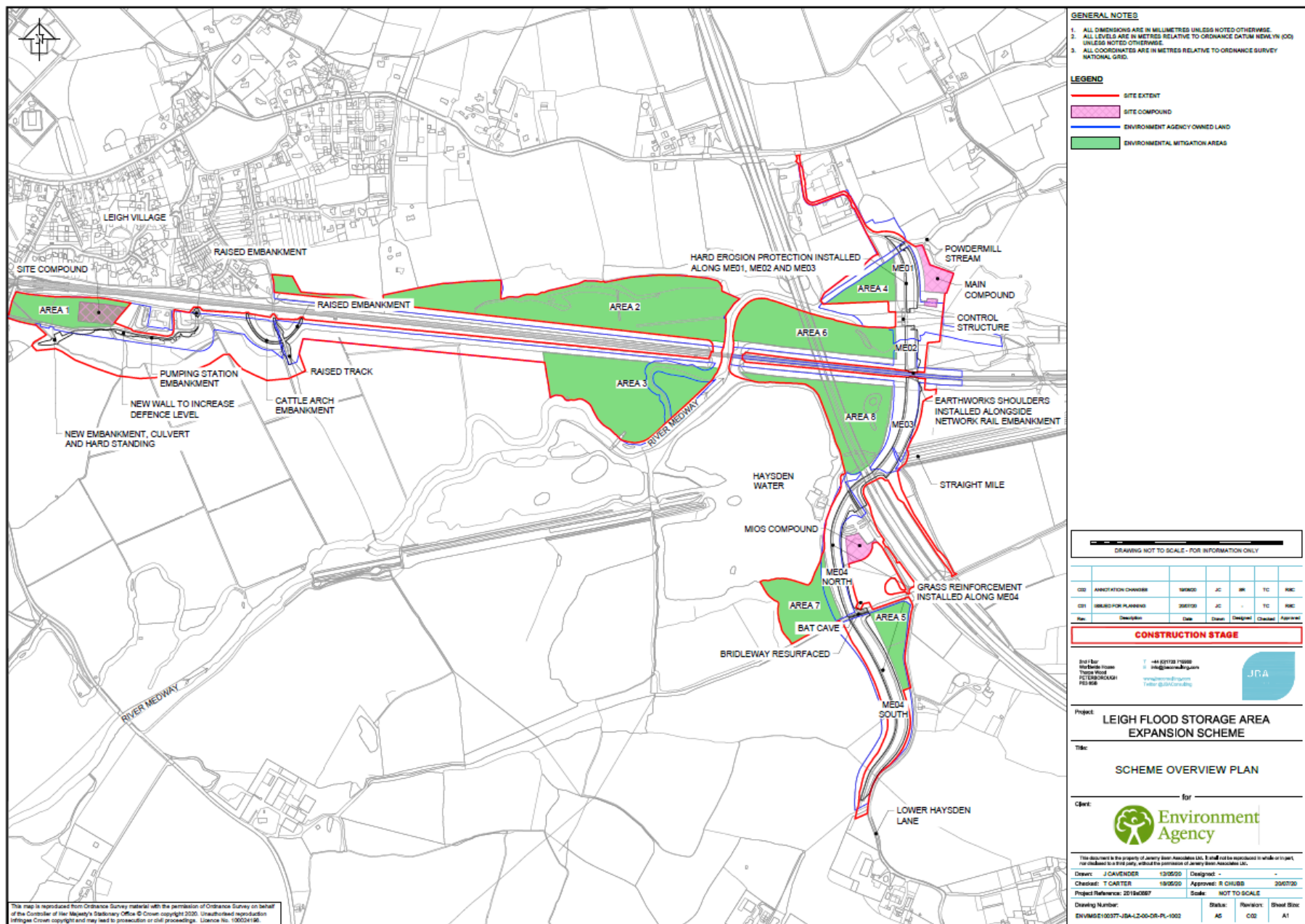


Figure 2: Leigh Flood Storage Area Expansion Scheme Overview Plan – mitigation/enhancement opportunity areas shaded

Scoping process to inform assessment

A formal request for an EIA screening and scoping opinion for the Scheme was submitted to the three Local Planning Authorities involved – Tonbridge and Malling Borough Council, Sevenoaks District Council and Tunbridge Wells Borough Council – in 2018. A further scoping request was submitted in December 2019 following significant changes to the Scheme (the removal of major earthworks to protect the railway which were no longer needed). The scoping opinion issued by Tonbridge and Malling Borough Council was informed by responses received from the other Local Authorities and statutory consultees (including Natural England and Historic England). The scoping opinion confirmed the issues to be addressed in the EIA.

Main environmental effects

The main environmental effects that the Scheme is likely to have and proposed mitigation measures to address these are set out below:

Water and flood risk

Through installation of an eel pass and other habitat enhancement measures and river restoration work planned the Scheme will deliver large benefits for fish and invertebrates.

By increasing the volume of storage that is permitted behind the embankment the Flood Storage Area will be able to accommodate more severe flood events. The Scheme will decrease flood risk for hundreds of properties, businesses and transport infrastructure downstream in Tonbridge, delivering a significant beneficial impact for the local area (reducing flood risk to over 1,400 homes and 100 businesses downstream).

Storing water to 28.6m AOD will flood an additional 16.4 hectares of land when the storage area operates, but this will provide 7.3million m3 of storage – a capacity increase of 24%. The additional land that would be flooded if the Storage Area were to store flood water to 28.6 AOD is shown below in Figure 3.

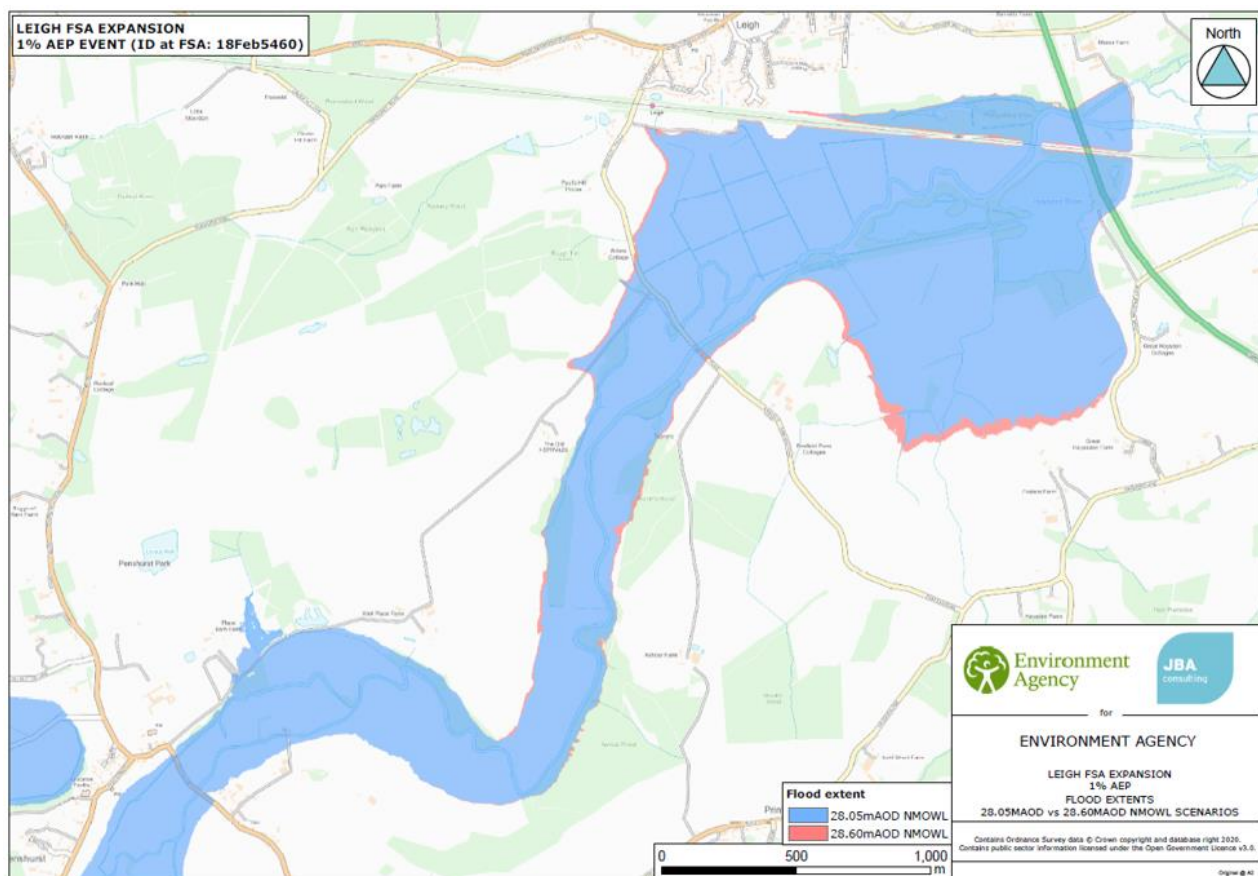


Figure 3 Comparison of existing (28.05m) and proposed (28.6m AOD) flood extents – 1% AEP

The Scheme will cause a minor increase in flood levels upstream of the Control Structure for some receptors such as Ensfield Road. This represents a slight adverse impact. The Control Structure will continue to be used to draw down the Flood Storage Area to maintain safe water levels. Changes to flood water levels are shown in Figure 4 below.

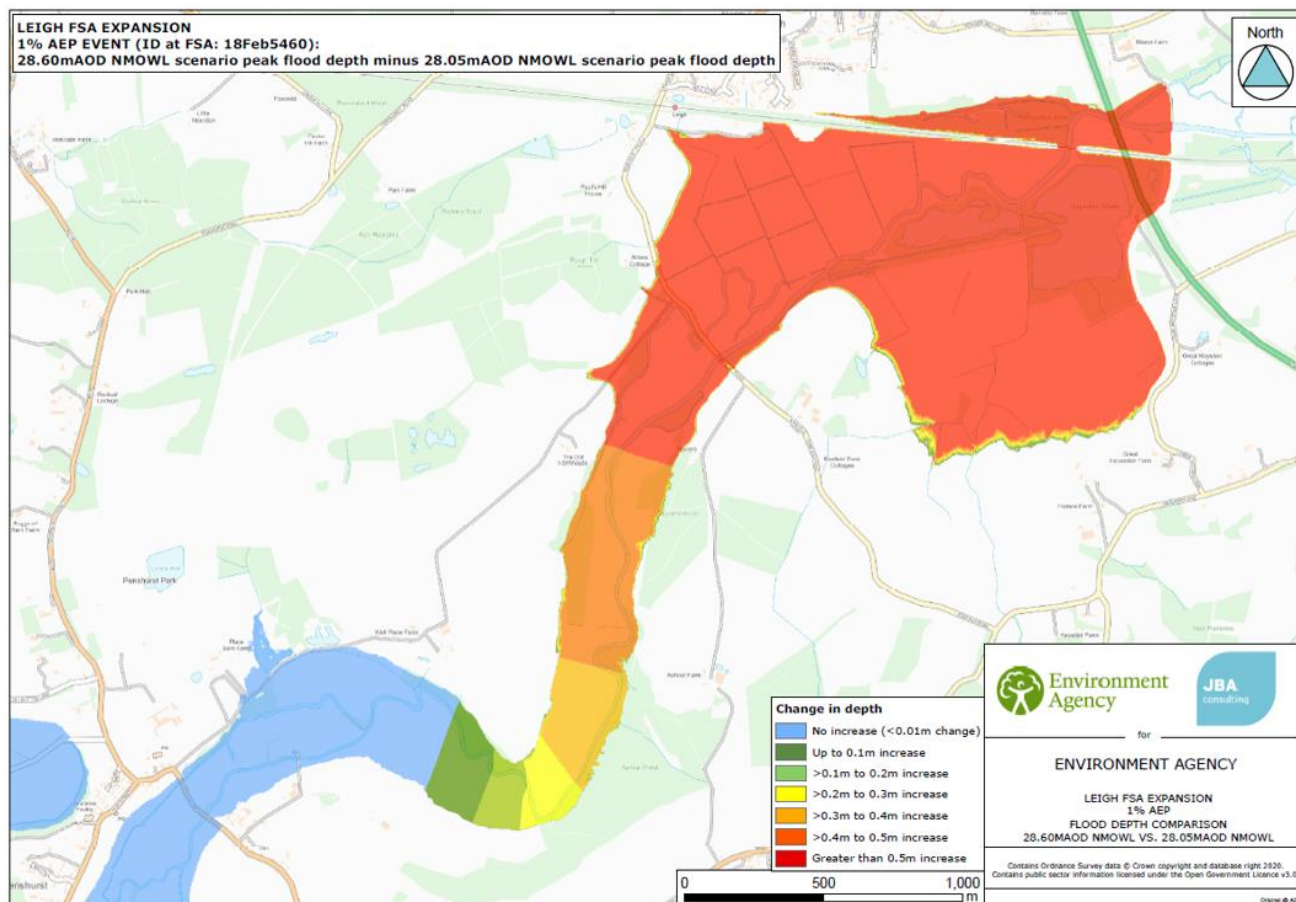


Figure 4 Flood depth comparison of existing (28.05m AOD) and proposed (28.6m AOD) water storage levels – 1% AEP

Effects on Biodiversity

The predicted effects of the scheme on biodiversity, during both construction and operation, are considered to be minimal, with very few permanent adverse effects as a result of the Scheme. Impacts mainly relate to small scale vegetation clearance and tree removal which will be reinstated on completion of the works or addressed through proposals for compensation planting or management. No significant long-term adverse effects are anticipated in terms of overall ecology. More detail regarding site clearance requirements is provided on the Final Landscape Masterplan drawings within **ES Appendix G** of the Environmental Statement and the Arboricultural Impact Assessment for the Scheme.

By adopting a Biodiversity Net Gain approach and the proposed ecological enhancement measures, the Scheme will deliver a net positive impact on biodiversity, flora and fauna. The proposals include woodland habitat management and habitat creation/enhancements within the mitigation and enhancement areas identified on the Scheme Overview Plan.

Biodiversity Net Gains of at least 10% are predicted in relation to habitats and 13% for hedgerows, giving a significant positive residual effect overall. If funding allows, additional habitat gain over and above this could be delivered by the Scheme.

To address Water Framework Directive objectives, an eel pass will be provided on the River Medway by the Control Structure along with habitat improvement works on Powdermill and Straight Mile streams.

Impact on local residents and visitors

The main impacts of the Scheme on local residents and visitors are likely to be as a result of local travel disruption (in relation to construction traffic and deliveries) and the dust, noise and visual impacts associated with construction activity. Traffic lights will be required on Lower Haysden Lane to allow HGV access for deliveries to the compound that is proposed in Haysden Country Park.

Construction impacts will be minimised through good construction practice and specific mitigation measures as set out in the Environmental Action Plan (EAP). These will include controls on working hours and how construction is to be carried out. The Contractor will develop a Traffic Management Plan prior to construction to minimise traffic disruption.

Access to the sailing club, Haysden Water and the Haysden Country Park will be maintained for visitors throughout construction.

There will potentially be adverse impacts on recreational users of the Country Park during construction due to construction noise, dust or impact on visual amenity, but this will be temporary. Footpaths and other Rights of Way may need to be diverted locally during construction or temporarily closed. If this is necessary measures will be agreed with Kent County Council and advance warning will be provided, along with appropriate local diversion routes.

As an enhancement, new steps will be provided as part of the Scheme on the line of the Public Rights of Way that cross the Main Embankment (Footpaths MU46 and SR435).

Landscape and Visual Impact

The Scheme will have no long-term effects on landscape character due to the limited scale and nature of the works proposed and the re-establishment of vegetation that will be removed during the construction works. After installation of the MIOS erosion protection on the Main Embankment, grass will be re-established – impacts on landscape character and views will therefore be short-term and temporary.

As part of the Pumping Station / Cattle Arch embankment works, there will be construction of a new flood embankment as well as a nominal change in height of the existing embankment (See Photo 2 below).

These changes are not expected to have a significant effect on local views or character. When areas have been replanted the changes will not be noticeable in the context of the existing pumping station infrastructure.



Photo 2: View from Cattle Arch embankment looking west along the railway embankment towards the Archimedes Pumping Station

The residential properties most likely to be affected by the Scheme are those overlooking construction areas on Lower Haysden Lane or located on Ensfield Road with views towards the Pumping Station embankment. However, impacts would be short-term, during construction activity. No long-term landscape or visual impacts are predicted on residential receptors because of the Scheme.

Where installation of erosion protection on the Main Embankment means it will not be possible to replace woodland or scrub, planting will be carried out within the mitigation and enhancement areas.

This will include creation of Wood Pasture parkland landscape within Area 3, reinforcing the sense of place and distinctive landscape character seen within the large estates nearby.

Cumulative effects and Inter-relationships

Effects can be more significant when impacts of a proposed Scheme are considered alongside the environmental impact of other existing or approved projects.

Consultation with the planning teams for the relevant local authorities – namely Tonbridge and Malling Borough Council, Sevenoaks District Council and Tunbridge Wells Borough Council – and a review of local planning applications did not identify any other developments of a scale that were likely to cause significant effects should they overlap with the Scheme.

Inter-relationship effects for local residents and visitors have already been partly considered above, in terms of the combined effects of changes to visual amenity, noise impacts, dust and disruption due to traffic and impact on those taking part in recreational activity within Haysden Country Park.

Mitigation for the Scheme will include measures set out in the Environmental Action Plan (EAP), such as the appointment of a Community Liaison Officer, controls on speed limits and working hours/timing of deliveries.