

9. Landscape

9.1. Introduction

This chapter identifies and assesses the significance of and the effects of change resulting from the Proposed Scheme on: (a) the landscape as an environmental resource in its own right and (b) on people’s views and visual amenity.

9.2. Regulation and policy background

The European Landscape Convention (2000), Council of Europe

The Convention was ratified by the UK Government in 2006. It identifies landscape as ...

... an important part of the quality of life for people everywhere; in urban areas and in the countryside, in degraded areas as well as in areas of high-quality, in areas recognised as being of outstanding beauty as well as everyday areas ...”

“(Landscape should be protected by) actions to conserve and maintain the significant or characteristic features of a landscape ...

9.3. Methodology

9.3.1. Scope of assessment

The scope of the assessment provided in this chapter, as determined through the scoping process presented in the PEIR and clarified during the assessment process, is shown in Table 9.1 below.

Table 9.1 Scope of LVIA

Scoped in	Scoped out
Potential impacts on the Peat Moors, Open Moor and Moor Fringe landscape character areas during construction, the first one to two years of operation and in Year 5 of operation.	Long-term operational impacts on the Peat Moors, Open Moor and Moor Fringe landscape character areas.
Potential impacts on identified visual receptors during construction, the first one to two years of operation and in Year 5 of operation.	Long-term operational impacts on identified visual receptors.

9.3.2. Study area

The study area for the landscape and visual impact assessment (LVIA) includes the flood relief channels of the KSD and Sowy between Monk’s Leaze Clyce and Parchey Bridge and the extent of the wider surrounding landscape which the Proposed Scheme may affect. This includes the extent of local Landscape Character Areas (LCA) likely to be affected either directly or indirectly and the area within which visual impacts are likely to be experienced.

The LCAs are single unique geographical areas of a particular landscape type and are commonly defined in the landscape character assessments carried out by local planning authorities. In this case, the LCAs comprise the Peat Moors LCA, the Open Moor LCA and Moor Fringe LCA, which are described in more detail in section 9.4 below and shown on the Baseline Landscape Character plans (Figures 9.1 and 9.2, Appendix A).

The area within which visual impacts are likely to be experienced is referred to as the Zone of Theoretical Visibility (ZTV) and is shown on the Visual Amenity plans (Figures 9.3 and 9.4) in Appendix A. It is considered unlikely, due to the limited scale of the works, that they will be visibly perceptible to a significant degree at a distance greater than one kilometre. The maximum extent of the ZTV, and therefore the study area, has been limited to a corridor of 1km to each side of the channels. The study area boundary is shown on both the Baseline Landscape Character and Visual Amenity plans.

9.3.3. Guidance

The LVIA generally follows the Landscape Institute and Institute of Environmental Management and Assessment Guidelines for Landscape and Visual Impact Assessment (GLVIA) (3rd Edition). The assessment is informed by a site survey undertaken on 27th February 2020. Visual impacts have been assessed from publicly accessible vantage points.

9.3.4. Establishing the baseline

The assessment of impacts on landscape character is undertaken in four stages. The first stage involves the collection of information about the characteristic features of the landscape, its topography, vegetation patterns, settlements, watercourses, land use, cultural aspects, landscape designations and existing pressures likely to lead to change. This provides a baseline against which changes resulting from the proposals can be measured.

The second stage evaluates this information, breaking the landscape down into broadly homogenous landscape character areas. In this case, as described above and in section 9.4 below, the defined Landscape Character Areas (LCA) comprise the Peat Moors LCA, the Open Moor LCA and the Moor Fringe LCA.

9.3.5. Determination of significance

Sensitivity

In the third stage of the landscape assessment, judgements are made on the sensitivity of each receptor (LCA) and the magnitude of the impact on each receptor. Sensitivity is judged by considering the susceptibility of the receptor to the type of change arising from the specific proposals and the value attached to the receptor by society. Each character type is ranked for sensitivity in accordance with the criteria set out in the Table 9.2 below.

Table 9.2 Landscape sensitivity criteria

Sensitivity	Criteria
High	Areas and/or features which have a particularly high value, by nature of their condition, high scenic qualities, strong characteristics such as pattern and land cover, cultural associations, and/or relative position and amenity including level of tranquility. These are likely to be, but not necessarily, within a National Park, Area of Outstanding Natural Beauty, Registered Park and Garden or within a World Heritage Site.
Medium	Areas and/or features which are considered to be of high value by virtue of their beneficial characteristics such as pattern and land cover, sense of place or local or cultural associations and level of tranquility. These areas will be of regional or local importance and are likely to be, but not necessarily, designated by the planning authority as being of landscape value. These may include Areas of Great Landscape Value, Conservation Areas and urban and rural parks.
Low	Landscapes and/or features which retain a beneficial character such as pattern or land cover and a sense of place or local or cultural associations and a degree of tranquility. These areas are unlikely to be designated for their landscape value.
Negligible	Landscapes in fair to poor condition which have undergone change to the extent that they no longer have a distinctive local character such as pattern and/or land cover, or aesthetic quality, or they lack cultural associations or tranquility.

Magnitude

The magnitude of the impact on each receptor is judged by considering the size and scale of the impact, the geographical extent of the area that will be affected, the duration of the impact and its reversibility. This assessment considers whether the proposal fits into the landscape and to what extent it affects the landscape's distinctive quality, local diversity and character, whether it integrates with the natural landform or cuts through it against the grain, whether it removes or avoids features of landscape value, and whether it appears out of scale or inappropriate in its design. The magnitudes of the impacts are ranked in accordance with the criteria in Table 9.3.

Table 9.3 Magnitude of impact criteria for landscape assessment

Magnitude	Criteria
High Adverse	Total loss or large-scale damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic conspicuous features and elements.
Medium Adverse	Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic noticeable features and elements.
Low Adverse	Slight loss or damage to existing character or features and elements, and/or the addition of new but uncharacteristic features and elements.
Negligible	No noticeable loss, damage or alteration to existing character or features and elements.
Low Beneficial	Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Medium Beneficial	Partial or noticeable improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic and noticeable features and elements, or by the addition of new characteristic features.
High Beneficial	Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous features and elements, or by the addition of new distinctive features.

Significance of effects

The fourth stage considers the significance of the potential effects on the landscape arising as a result of the Proposed Scheme during construction and during operation. The significance of effect is determined by cross-referencing the judgements about the sensitivity/value of the landscape receptors against the magnitude of the impacts and is guided by the matrix provided in Table 9.4.

The significance of effect categories stated in Table 9.4 differ from those stated in Chapter 5, section 5.2.4 in so much as intermediate categories are presented in Table 9.4 to provide a finer gradation of significance classification that accounts more sensitively for differences in magnitude and sensitivity/value of landscape and visual receptors.

Any significance of effect assessed as having a level of moderate or greater is considered 'significant' (i.e. major, major-moderate and moderate).

During operation, the significance of effects is reported in Years 1 - 2 following completion of construction and in Year 5 following completion of construction, when any proposed landscape mitigation / vegetation reinstatement will have established

effectively and may have reduced any associated landscape impacts reported in Years 1-2.

Table 9.4 Matrix for the evaluation of significant landscape and visual effects

Magnitude	Value/Sensitivity			
	High	Medium	Low	Negligible
High adverse	Major adverse (significant)	Major adverse – moderate adverse (significant)	Moderate adverse (significant)	Moderate adverse – minor adverse (not significant)
Medium adverse	Major adverse – moderate adverse (significant)	Moderate adverse (significant)	Moderate adverse – minor adverse (Not significant)	Minor adverse (not significant)
Low adverse	Moderate adverse (significant)	Moderate adverse – minor adverse (not significant)	Minor adverse (not significant)	Minor adverse - negligible (not significant)
Negligible	Negligible (Not significant)			
Low beneficial	Moderate beneficial (significant)	Moderate beneficial – minor beneficial (not significant)	Minor beneficial (not significant)	Minor beneficial - negligible (not significant)
Medium beneficial	Major beneficial – moderate beneficial (significant)	Moderate beneficial (significant)	Moderate beneficial – minor beneficial (not significant)	Minor beneficial (not significant)
High beneficial	Major beneficial (significant)	Major beneficial – moderate beneficial (significant)	Moderate beneficial (significant)	Moderate beneficial – minor beneficial (not significant)

9.3.7. Visual impact assessment methodology

The assessment of impacts on visual amenity is undertaken in four stages. The first stage is to establish the area in which the Proposed Scheme may be visible, the different groups of people who may experience views of the Proposed Scheme, the viewpoints where they will be affected and the nature of the views at those points. A preliminary, desk-based identification is made of the potential visual receptors (i.e. people, either as individuals or as groups) that are likely to experience a change in view as a result of the Proposed Scheme, both during construction and on completion of the Proposed Scheme.

Potential visual receptors are defined as: residents, users of recreational areas, PRow and other areas of public access such as public open space and public sports grounds, users of public roads and railways, workers and public views from within valued landscapes. The areas from where the Proposed Scheme will theoretically be seen, known as the Zone of Theoretical Visibility (ZTV), is defined on a map. In this case, the ZTV has been determined using map interpretation, Google Earth imagery, and visual envelope mapping from an on-site visit. The ZTV informs the identification of a list of potential visual receptors. The ZTV and identified visual receptors are then checked during a site survey to determine the nature of the view, which may be affected by aspects not accounted for by the ZTV such as screening caused by local landform, buildings or by woodland.

The second stage of the visual assessment is to systematically identify the potential likely impacts on the visual receptors. This is undertaken by assessing the extent of the difference between the existing view (i.e. prior to the development) and the view with the proposed development in place, considering several factors: whether the Proposed Scheme is central or peripheral to the view, what proportion of the view alters, the distance between the receptor and the Proposed Scheme, the sensitivity of the receptor to visual changes and how well the Proposed Scheme fits into the existing scene.

In this stage, judgements are made on the sensitivity of each receptor and the magnitude of the impact on each receptor. Sensitivity is judged by considering the susceptibility of the receptor to the type of change arising from the Proposed Scheme and the value attached to the view by people. Each visual receptor is ranked for sensitivity in accordance with the criteria set out in Table 9.5.

Table 9.5 Sensitivity criteria for visual receptors

Sensitivity	Criteria
High	Private dwellings where viewers are familiar with the overall scene. Public views within areas of protected landscapes such as National Parks and Areas of Outstanding Natural Beauty.
Medium	Public Rights of Way and public access areas outside protected landscapes where viewers gain a long view due to slower speed or are likely to experience the views frequently or for long periods.
Low	Commercial premises, public facilities and roadside footways where the viewer may be familiar with the scene but holds it in

Sensitivity	Criteria
	less regard than viewers from residential properties or recreational Public Rights of Way.
Negligible	Surrounding road and rail networks where the viewer gains brief glimpses of the view at speed.

The magnitude of the impact on each receptor is assessed by considering the size and scale of the impact, the geographical extent of the area influenced, the duration of the impact and its reversibility. The magnitudes of the impacts are ranked in accordance with the criteria set out in Table 9.6.

Table 9.6 Magnitude of impact criteria for visual assessment

Magnitude	Definition
High negative	Where the scheme will cause a substantial deterioration in the existing view.
Medium negative	Where the scheme will cause a noticeable deterioration in the existing view.
Low negative	Where the scheme will cause a discernible deterioration in the existing view.
Negligible	No discernible deterioration or improvement in the existing view.
Low positive	Where the scheme will cause a discernible improvement in the existing view.
Medium positive	Where the scheme will cause a noticeable improvement in the existing view.
High positive	Where the scheme will cause a substantial improvement in the existing view.

Stage four considers the significance of the potential effects on the visual receptors arising as a result of the Proposed Scheme during construction and during operation. The significance of effect is determined by cross-referencing the judgements about the sensitivity/value of the visual receptors against the magnitude of the impacts in accordance with Table 9.4.

During operation, the significance of impacts is reported in Years 1-2 following completion of construction and in Year 5 following completion of construction where any proposed mitigation planting will have established effectively and will have reduced any residual landscape impacts reported in Years 1-2.

Any significance of effect assessed as having a level of moderate or greater is considered to be 'significant'.

9.3.8. Limitations

Access to the site during the site survey was limited to publicly accessible vantage points. Whilst the full length of the KSD section of the Proposed Scheme was accessed via public footpaths, access along the Lower Sowy was restricted to intermittent road and accessible farm track crossing points over the river. South of Beer Wall, the Upper Sowy was accessed along a section of the River Parrett Trail between Stathe and Oath Lock. The proposed bank raising locations along the Upper Sowy upstream of Oath Lock were not surveyed but, as these works comprise discrete lengths of minor bank raising works, this is not considered a significant limitation to the assessment of the resulting impacts.

9.4. Existing environment

A desk study baseline review was carried out in November 2019 and a site survey undertaken on 24 February 2020.

The baseline review has revealed that there are no formal landscape designations within the study area which encompasses the flood relief channels of the Sowy and KSD plus a corridor of 1km to each side of the channel. Due to the limited scale of the works required under the Proposed Scheme it is considered unlikely that changes to the existing landscape resource and visual amenity will be discernible to a significant degree at distances beyond the study area boundary.

9.4.1. Baseline landscape character

At a national level, the Sowy/KSD system is located within Natural England's National Character Area (NCA) 142, Somerset Levels and Moors. A vast area of drained wetland which lies at or below the level of the high tide in the adjacent Bristol Channel, covering a total of about 230 square miles, this flat, open pastoral landscape is drained by the rivers River Parrett, Brue and Axe and their tributaries. Formed mainly by the accumulation of marine and estuarine alluvium as sea levels rose in the post-glacial era, broad valleys have been filled to a depth of up to 30m. This is topped by peat which began forming from wetland vegetation about 6,000 years ago. Continued deposition of marine and estuarine clays created the broad belt of coastal 'Levels' which are slightly higher than the inland 'Moors'. The key characteristics of the NCA, as described in the NCA profile, which are relevant to the study area are summarised as follows:

- A deeply rural, pastoral and flat landscape of rivers and wetlands, artificially drained, irrigated and modified to allow productive farming. The whole area is influenced to some degree by the artificial regulation of water.
- The coastal levels were once mostly saltmarsh and the meandering rhynes and irregular field patterns, defined by intermittent hedgerows, follow the former courses of creeks and rivers. The larger villages are all located on the slightly higher ground within the levels.
- The inland moors are open, often treeless, and have a chequer-board-like pattern of rectilinear fields, ditches, rhynes, drains and engineered rivers, and roads. Occasional hedgerows and lines of pollard willows associated with rhynes and ditches are found towards the edges of the moors, but in the centre field boundaries are frequently defined by ditches and rhynes ('wet fences'). Semi-natural unimproved grasslands, wet meadows, fen, mire and

reed beds underline the area's wetland character. Settlement on the moors is infrequent and generally limited to small farmsteads or hamlets. The complex system of control of water levels is apparent through the hierarchy of diches, rhynes and canalised rivers or cuts, with sluices and pumping stations. Levees or banks, often carrying roads and droves but also containing watercourses, relate to and reinforce the pattern of enclosure, often forming the only upstanding feature of the landscape.

- Reflecting the history of reclamation, roads are often straight droves, causeways and flood embankments, slightly raised and related to the drainage channels of the 18th century landscape of the inland moors.
- The biodiversity of the area is of national and international importance and more than two-thirds of the area is classified as floodplain and coastal grazing marsh priority habitat, the third largest lowland grazing system in Britain. It also has a rich environmental history of human occupation and management of a wetland landscape extending over more than 6,000 years.

The study area closely reflects the key characteristics of the NCA as described above. The study area occupies a small part of the overall NCA and any changes brought about by the Proposed Scheme are considered to be so small in the context of the wide area covered by NCA, any potential effects on the NCA have not be considered further.

With regard to local level landscape character assessments, the KSD and downstream section of the Sowy to the north of Beer Wall lie within Sedgemoor DC's boundary. The upstream section of the Sowy from Beer Wall to its confluence with the River Parrett at Monk's Leaze Clyce lies within South Somerset Council's boundary.

Sedgemoor DC's Sedgemoor Landscape Assessment and Countryside Design Summary (2003) defines one landscape character area (LCA), Peat Moors, (see Figure 9.1 in Appendix A) through which the KSD (from Parchey Bridge to the confluence with the Sowy) and downstream section of the Sowy (from the confluence with the KSD to Beer Wall) pass. The Peat Moors LCA as described therein is summarised as follows:

The Moors comprise the very low-lying areas (3-5m AOD, well below the high tide levels in the Bristol Channel) which were mainly marsh or fenlands until large-scale drainage and enclosure was affected between 1770 and the mid-nineteenth century. The Moors are characterised by a flat landscape with a strong rectilinear pattern of drainage ditches, rhynes and accompanying straight drove roads. Land use is mainly permanent pasture, traditionally for summer grazing and hay, but latterly also arable where water level management allows. Pollarded willows are a locally distinctive but not universal feature, and alder and poplar are common and where hedgerows were planted, hawthorn is the most common species. On some Moors sporadic tree growth alongside drainage ditches forms intermittent lines of scrub rather than continuous hedgerow, elsewhere the Moors landscape may be very open and treeless. Generally, there are very few buildings present other than isolated farmsteads. Views are mostly wide and panoramic other than where restricted by intermittent hedgerows and trees (more common on the Clay Moors) and many areas are prone to winter flooding. It is a particularly distinctive landscape with a very remote feeling strengthened by its lack of buildings and settlement. Most of the

Moors are included within the 'Somerset Levels and Moors Environmentally Sensitive Area' to encourage traditional agricultural practice and conservation. The capacity for development is noted as limited by landscape and nature conservation considerations but also by flood risk and, as a result, very little development is expected. It is noted regarding the potential visual impact of structures in areas where there are hedgerows or woodland, that these features could very effectively screen things from view within this flat landscape but that views to the Moors from the surrounding higher ground must also be considered.

South Somerset District Council's 'The Landscape of South Somerset' (1993) defines the area from Beer Wall to the Sowy throttle as 'Open Moor', a sub-type of the 'Moors and Islands' character zone, and the area from the Sowy throttle to the Sowy's junction with the River Parrett as 'Moor Fringe' (see Figure 9.2 in Appendix A). These LCA's are described as follows:

'Open Moor' has the following key characteristics: 'an overall pattern and wetness created by high water tables, winter flooding and the extensive regular rectilinear network of grassy droves and rhynes as 'wet fences' with their associated herb-rich vegetation'; 'an expansive, visually homogenous open naturalness created by extensive areas of low-intensity grassland and herb-rich pasture with a lack of scrub, woodland or fencing. Traditionally planting restricted to occasional lines of regularly pollarded willows in key places and isolated field junction planting'; 'An isolation and naturalness created by a lack of buildings and artefacts or modern automotive appearances in management'.

'Moor Fringe' lies between the moor and the steeper wooded slopes of the escarpment. Hedges are usually species-rich and fields are sometimes long and thin emphasizing the flow of the slope. Ancient tracks and roads fringe the steep escarpment and link a thin ribbon of farmsteads and cottages. Hedge-trees are usually oak or ash, the latter often pollarded. Willows, often old pollards, are more common on the wetter ground. Overall there is great rural charm in this small-scale domestic landscape which contrasts strongly with the vast unpopulated expanses of the moor and the enclosed secrecy of the wooded scarps'.

The study area closely reflects the similar characteristics of the Peat Moors LCA and the Open Moor LCA, as described above, where it runs through these LCAs. The character of the immediate landscape between the Sowy throttle and the Sowy's confluence with the River Parrett also reflects the open, flat and wet nature of the moors but the less open, hedged landscape of the Moor Fringe LCA is evident to the north of this section of the Sowy.

No national or local landscape designations apply. Sedgemoor DC's Sedgemoor Landscape Assessment and Countryside Design Summary (2003) 'Designated Areas' map notes that the Special Landscape Area local planning designation shown on the map is no longer in force.

At a site-specific level, the KSD comprises a very straight, artificial channel, some 30m in width, with a rectilinear alignment. Between Parchey Bridge and the KSD's confluence with the Sowy, crossings are limited to a footbridge close to the confluence. Vegetation on the left bank of the KSD is generally limited to marginal wetland close to water level bordered by open rectilinear pasture fields, with very sporadic linear strips of scrub and the occasional tree present in places between the fields and KSD. The only exception is a limited area of woodland immediately

upstream of Parchey Bridge. The right bank of the KSD is lined with marginal wetland vegetation which is bordered on the landward side by a strip of rough grazed grassland some 35m wide (in EA ownership) which supports intermittent single and small groups of mature trees at regular intervals along the length of the KSD. To the north of this strip, open rectilinear pasture fields extend away into the distance. The strips of marginal vegetation generally tend to be around 2m to 4m wide with occasional wider areas where silt deposition has locally reduced water depths. It is noted that the KSD has not been subject to any regular vegetation maintenance or desilting for some 20 years, except for some desilting works by Parchey Bridge in 2018. This is likely to have enabled silt deposition to continue and thereby encouraged the development of marginal vegetation along the edges of the KSD.

The existing flood embankments adjacent to the KSD are visually inconspicuous, as gently rounded shallow profiled mounds that barely register as flood defences.



Figure 9.5 Photo Viewpoint 01 - View of KSD from the right bank looking south near Parchey



Figure 9.6 Photo Viewpoint 02 - View of KSD from the right bank looking north-west near confluence with Sowy

The topography along the route of the KSD is level, as is the adjacent corridor except where a low narrow ridge descends from the western edge of Pitt Hill and terminates to the north of the KSD some 700m south-east of Parchey Bridge.

A public footpath runs the length of the KSD on the left bank between Parchey Bridge and the Sowy confluence (public footpath BW 8/6 between Parchey Bridge and Chedzoy New Cut and BW 36/5 between Chedzoy New Cut and the Sowy confluence) and three footpaths (public footpaths BW 8/20, BW 36/8 and BW 31/16) lead from the KSD towards Westonzoyland to the south and Sutton Mallet to the north. Residential and agricultural buildings are substantially absent within a 500m wide corridor either side of the KSD, except for a small number of buildings off Ward Lane to the west of Parchey Bridge.

The Sowy comprises an artificial channel, some 12-15m in width, less rectilinear in alignment than the KSD but generally comprised of a series of straight sections of channel with curved sections at changes in direction. The Langacre Rhyne, a similarly sized channel, runs in a parallel alignment some 35 m to the east of the Sowy between the KSD and Beer Wall. The intervening strip of land comprises treeless, grazed rough grassland and is in EA ownership.

As is the case on the KSD, the existing flood embankments adjacent to the Sowy are visually inconspicuous, gently rounded shallow profiled mounds that barely register as flood defences.



Figure 9.7 Photo Viewpoint 03 - View of the Sowy looking upstream from the A361 road bridge.



Figure 9.8 Photo Viewpoint 04 - View of the Sowy downstream of Beer Wall, illustrating the inconspicuous nature of the existing flood embankments



Figure 9.9 Photo Viewpoint 05 - View of the Sowy looking south-east along the River Parrett Trail towards Oath

The Sowy is crossed by four visually unobtrusive road bridges (the A361, the A372 at Beer Wall and the Aller Drove and Stathe Drove crossings) and nine farm access/footpath bridges. There are no settlements adjacent to the Sowy; the nearest buildings are private properties located on the left (east) side of the Parrett between Stathe and a point some 800m to the east of Oath, at a distance of approximately 100m from the Sowy. The banks of the Sowy support a limited range of riparian marginal wetland vegetation, although the extent of this is limited due to the regular (at least annual) 'weed cutting' regime and flailing of the banks. The principal vegetation cover on the banks is grassland which is grazed for the most part except for limited sections adjacent to fields used for silage where the grass growth is more rank. There are occasional trees (including pollarded willows) and shrubs located adjacent to the channel, mostly associated with adjoining field boundaries and road crossings, but the Sowy is largely free of riparian trees along its entire length. The wider pastoral landscape is populated with intermittent linear belts of trees and scrub hedge associated with the roads, droves and rhyes.

Public access adjacent to the Sowy includes the River Parrett National Trail and Macmillan Way West National Trail which run on the same footpath route at a distance of some 35m from and parallel to the Sowy on its left bank for some 4.6km from Monk's Leaze Clyce to just north of Stathe (public footpath L1/3 between Monk's Leaze Clyce and the Sowy throttle (where L1/3 crosses the Sowy to run north) and L1/8 between the Sowy throttle and where the River Parrett turns west away from the Sowy to the north of Stathe). A public footpath (the continuation of L1/8) continues to run parallel to the Sowy to the north of Stathe but at a distance of 40-200m from the Sowy for approximately 1km until it reaches Pathe. Public footpath L1/1 crosses the Sowy at Oath Bridge from just north of Stathe.

There are newly installed culverts and flow control structures at Beer Wall, which, combined with associated fencing and barriers and areas of hardstanding, are visually detracting features in this rural landscape but the effect is localised. The Langacre Rhyne culvert headwalls, in comparison, comprise low brick walls which are less visually intrusive and integrate more effectively into the landscape. The A372 road is frequently bordered by shrubby, standard and pollarded willow trees which visually filter views of the road from adjacent areas.

In summary, the landscape receptors to be assessed comprise the following:

- LCA 1: The Peat Moors LCA. Due to its distinctive sense of place generated by its expansive, flat, rectilinear drained wetland nature, pastoral land cover, high level of tranquillity and elements of nature conservation value, the character area is deemed to be of medium landscape sensitivity in accordance with Table 9.2.
- LCA 2: The Open Moor LCA. Due to its distinctive sense of place generated by its expansive, flat, rectilinear drained wetland nature, pastoral land cover, high level of tranquillity and elements of nature conservation value, the character area is deemed to be of medium landscape sensitivity in accordance with Table 9.2.
- LCA 3: The Moor Fringe LCA. Due to its sense of place generated by the transition in landscape character from flat, rectilinear drained wetland to wooded escarpment, its rural charm, pastoral land cover and high level of tranquillity, the character area is deemed to be of medium landscape sensitivity in accordance with Table 9.2.

9.4.2. Baseline visual amenity

Visual receptors within the ZTV who may potentially experience visual impacts as a result of the proposed works, the construction compound and material stockpile locations comprise:

- Users of sections of the public footpaths and bridleways to either side of the KSD between Parchey Bridge and the confluence with the Sowy
- Users of sections of the public footpaths to either side of the Sowy between the confluence of the KSD and Beer Wall
- Users of sections of the River Parrett National Trail and Macmillan Way West National Trail (Footpaths L1/8 and L1/3) and other public footpaths to either side of the Sowy between Stathe and Monk's Leaze Clyce
- Residents in properties with views of the proposed works and material stockpile areas, potentially comprising 6 properties with views of the KSD and 10 properties with views of the Sowy. Intervening vegetation and flood embankments are likely to screen views of the KSD and Sowy in many cases.
- Users of Westonzoyland Airfield and Springway Industrial Estate with views of the import material stockpile area at Langmead
- Anglers along the KSD
- Agricultural workers in the farmland adjacent to the KSD and Sowy

- Road users of Ward Lane at Parchey Bridge, A361, A372 and Aller Drove where these routes cross the KSD and Sowy or run past the construction compound and material stockpile locations

With regard to users of the A361 and A372, Sedgemoor DC's Sedgemoor Landscape Assessment and Countryside Design Summary (2003) 'Areas of High Sensitivity' map⁸ shows corridors along either side of the A361 and A372 which are designated as 'Areas of high sensitivity' [in terms of visual impact] in relation to road corridors'. These areas are understood to be visually sensitive areas for road users 'within which priority should be given to conservation and enhancement measures'.

There will be a requirement to transport flood embankment fill material from a soil reprocessing plant located off the A372 near Westonzoyland to the Lower Sowy and Upper Sowy by road. Fill material will be transported by 20t HGVs to the A372 and A361 access points where these roads cross the Sowy, or by tractor and trailer (8t) between the soil reprocessing plant and all other site access points (see Figure 3.1, Appendix A). Fill material will be immediately transferred to placement locations along the Sowy using 8t tractor and trailers if ground conditions are suitable, otherwise using light weight tracked dumpers. Average daily wo-way traffic journeys are stated in section 3.3.

Visual receptors within the ZTV who may potentially experience temporary and intermittent visual impacts as a result of these traffic journeys comprise:

Residents in properties adjacent to the proposed haulage routes; approximate numbers of private properties that may experience potential visual impacts are as follows:

- Middlezoy: 14
- Othery: 14
- Aller: 109
- Combe: 11
- Greylake: 7

Commercial / industrial / farm premises:

- approximately 16 to the west of Beer Wall
- approximately 10 to the east of Beer Wall
- Pedestrians on footways and footpaths adjacent to the likely transport routes
- Road users on:
 - A372 between Westonzoyland and Beer Wall.
 - A372 between Beer Wall and Combe
 - Oliver's Road between A372 and A361
 - A361 between A372 and Sowy crossing

⁸ Sedgemoor Landscape Assessment and Countryside Design Summary (2003), Map 6, Areas of High Sensitivity.

- Aller Drove between Aller and Pathe
- Agricultural workers in the farmland adjacent to the likely transport routes

The visual receptors identified, their sensitivity to change, their existing view and the proposed works which will affect existing views are set out in the visual impact table (Table 9.7) below and identified on the baseline visual amenity plans (Figures 9.3 and 9.4 in Appendix A).

9.5. Likely significant effects

This section describes the impacts that the Proposed Scheme (as described in Chapter 3) are likely to have on the baseline landscape character and visual amenity and assesses the likely effects of these impacts on the identified receptors during construction and operation.

9.5.1. Impacts on baseline landscape character and visual amenity

The impacts that the Proposed Scheme proposals are likely to have on the baseline landscape character and visual amenity are described below. The potential effects of these impacts on landscape character and visual amenity are assessed in sections 9.5.2 and 9.5.3.

Impacts during construction phase

The following generic landscape and visual impacts have been identified as likely during the construction phase:

- Temporary adverse impacts detracting from the open, tranquil and natural character and visual amenity of the study area caused by disruption, noise and visual intrusion arising from construction activities and plant (including long reach excavators, tractors and trailers and dumper trucks), topsoil stripping and bank re-profiling and raising works which will expose extended areas of bare earth, the removal of approximately 13 trees and limited areas of scrub/ruderal vegetation required to enable construction access, sluice upgrade works at two locations on the KSD, the excavation of two-stage channels, embayments and backwaters on the right bank of the KSD and lower Sowy, portable and fixed construction compounds and temporary material stockpiles.
- Temporary adverse impacts on the visual amenity and recreational enjoyment of identified receptors arising from disrupted access along adjacent public footpaths and angling locations.
- Short-term, intermittent adverse impacts on the visual amenity of identified receptors along the haulage routes arising from HGV and tractor and trailer journeys during the transportation of fill material from the imported material stockpile near Westonzoyland to the Sowy.

Impacts during operational phase

The following generic landscape and visual impacts have been identified as likely during the operational phase, once the construction of the Proposed Scheme has been completed:

Short-term operational adverse landscape and visual impacts due to the excavation of sections of two-stage channels, embayments and backwaters on the right bank of

the KSD and Sowy before the associated marginal wetland vegetation and habitats and grass cover on deposited spoil material become fully established. Any such works within the KSD and Sowy are likely to temporarily remove the ecologically and visually valuable marginal wetland fringe vegetation along the banks of the channels. This marginal wetland vegetation should be retained in-situ wherever possible but where this is not feasible, it should be temporarily re-located and stored in appropriate conditions conducive to its continuing survival for re-placement once the widening works have been completed.

Short-term operational adverse landscape and visual impacts due to the likely extensive exposure of bare earth and excavated material following the re-profiling and raising of existing embankments and the deposition of excavated peat and sediment onto areas to the landward of the existing embankments, and the short-term installation of fencing to protect seeded areas from grazing stock. Effects will continue but diminish until the reinstated sward and removed marginal vegetation establish sufficiently to withstand grazing and trampling from grazing stock and the protective fencing is removed.

Potential short-term operational adverse landscape and visual impacts should any silty material excavated from the channel banks during the creation of two-stage channels, embayments and backwaters prove to be mobile (liquid) and slurry-like when it is deposited on the landward side of the adjacent flood embankments. There is also a high potential for excessive ruderal weed growth on areas of silt deposition which it will be important to minimise and control following construction.

Maintenance activities during the landscape establishment period, including grass and marginal vegetation cutting, weed control and fence repair and removal, will also give rise to localised, intermittent adverse visual effects.

Medium-term operational adverse landscape and visual impacts due to the removal of approximately 13 trees required to enable bank raising works on the KSD and Lower Sowy and the removal of a limited area of scrub/ruderal vegetation on the left banks of the KSD and Lower Sowy required to enable construction access. Impacts will reduce as replacement trees (planted at a ratio of five replacement trees per one removed tree) and any required replacement scrub grow to a mature size.

Long-term operational adverse landscape and visual impacts due to the raising of the existing flood embankments along the Upper Sowy by up to 0.5m, along the Lower Sowy by up to 0.3m and along the KSD by up to 0.5m (final levels after settlement), incorporating 3m wide crests with 1 in 3 formed side slopes on the riverside and 1 in 5 formed side slopes on the landward side of the flood embankments. Compared to the gently rounded, shallow profiled mounds with varying crest widths and side slope gradients which comprise the existing flood banks, the re-profiled, steeper and higher embankments are likely to form more visually and physically obvious enclosing features in the landscape which, whilst not being entirely uncharacteristic of the local landscape character, will adversely affect the open nature of the moors landscape to a limited degree within the local vicinity of the Sowy and KSD.

Long-term operational beneficial landscape and visual impacts due to the creation of three sections of two-stage channel, three embayments and one backwater on the right bank of the KSD and Sowy and associated enhancement and expansion of

marginal wetland vegetation and habitats, once these become fully established, which may take up to 5 years after completion of the implementation works.

9.5.2. Landscape effects

This section assesses the effects of the impacts of the Proposed Scheme on the identified landscape receptors, comprising LCA1, LCA2 and LCA3, with reference to the construction and operational periods.

LCA 1: Peat Moors

Within LCA 1, the Proposed Scheme elements comprise:

- The re-profiling and raising of a total of up to 4.6 km of existing flood bank on the left and right banks of the KSD between a point 0.46 km south of Parchey Bridge to the KSD/Sowy confluence.
- The re-profiling and raising of a total of up to 6.9 km of existing flood bank on the left and right banks of the Lower Sowy between the KSD/Sowy confluence and Beer Wall.
- On the KSD, the construction of an embayment (135m long), one two-stage channel (150m long) and a backwater (100m long).
- On the Lower Sowy, the construction of two embayments (150m and 100m long) and two two-stage channels (each 150m long).
- The raising of the headwalls and wing walls of Cossington Right and Chilton Right outfalls.

These Proposed Scheme elements are likely to result in the following physical impacts on the existing landscape elements within LCA 1:

- Adjacent to the KSD, the stripping of approximately 2.8ha of existing grassland from the footprint of the bank re-profiling works (excluding any adjacent working area).
- Adjacent to the Lower Sowy, the stripping of approximately 3.9ha of existing grassland from the footprint of the bank re-profiling works (excluding any adjacent working area).
- The excavation of up to approximately 1,800 m³ of earth material from the right channel bank of the KSD and its deposition on the landward side of the adjacent flood embankments and the associated removal of up to approximately 0.7 km² of existing marginal vegetation (required for the creation of the WFD enhancements).
- The excavation of up to approximately 1,950 m³ of earth material from the right channel bank of the Lower Sowy and its deposition on the landward side of the adjacent flood embankments and on the left bank of the Lower Sowy downstream of the A361 and the associated removal of up to approximately 0.8 km² of existing marginal vegetation (required for the creation of the WFD enhancements).

The removal of approximately 13 trees required to enable bank raising works on the KSD and Lower Sowy and the removal of a limited area of scrub/ruderal vegetation on the left banks of the KSD and Lower Sowy required to enable construction access

Minor localised disturbance to ground profiles and grass cover around the Cossington Right Rhyne and Chilton Right Rhyne outfalls and construction culvert crossings at Chedzoy New Cut and Cossington Right Rhyne.

The significance of the effects on the LCA that these impacts are likely to give rise to are as follows:

- During construction (approximately eight weeks), the Proposed Scheme is likely to give rise to temporary, localised effects of moderate adverse significance on LCA 1.
- During the initial operational stage following completion (in Years 1-2 after completion), before landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to give rise to localised effects of moderate - minor adverse significance on LCA 1.
- In the longer-term (5 years+ after completion), once landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to result in both adverse and beneficial impacts on LCA 1. Localised adverse impacts are likely to arise from the increased size, angularity and visibility of raised flood embankments which will conflict with the open, topographically level character of the moors landscape. Localised beneficial impacts are likely to arise from the creation of new riparian wetland habitats. These longer-term operational adverse and beneficial impacts are considered likely to balance out and result in an overall negligible significance of effect on LCA 1.

LCA 2: Open Moor

Within LCA 2, the Proposed Scheme elements comprise:

- The raising of two short sections of existing informal flood embankments on the right bank of the Upper Sow, close to the village of Oath.

These Proposed Scheme elements are likely to result in the following physical impacts on the existing landscape elements within LCA 2:

- The stripping of existing grassland from the footprint of the bank re-profiling works (excluding any adjacent working area).

The significance of the effects on the LCA that these impacts are likely to give rise to are as follows:

- During construction (approximately one week), the Proposed Scheme is likely to give rise to temporary, localised effects of minor adverse significance on LCA 2.
- During the initial operational stage following completion (in Years 1-2 after completion), before landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to give rise to localised effects of minor adverse significance on LCA 2.
- In the longer-term (five years+ after completion), once landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to result in a minor adverse - negligible significance of effect on LCA 2.

LCA 3: Moor Fringe

Within LCA 3, the Proposed Scheme elements comprise:

- The raising and re-profiling of two short sections of existing informal flood embankments on the right bank of the Upper Sow, close to the village of Oath.

These Proposed Scheme elements are likely to result in the following physical impacts on the existing landscape elements within LCA 3:

- The stripping of existing grassland from the footprint of the bank re-profiling works (excluding any adjacent working area).

The significance of the effects on the LCA that these impacts are likely to give rise to are as follows:

- During construction (approximately one week), the Proposed Scheme is likely to give rise to temporary, localised effects of minor adverse significance on LCA 3.
- During the initial operational stage following completion (in Years 1-2 after completion), before landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to give rise to localised effects of minor adverse - negligible significance on LCA 3.
- In the longer-term (5 years+ after completion), once landscape mitigation / vegetation reinstatement works have effectively established, the Proposed Scheme is likely to result in a negligible significance of effect on LCA 3.

9.5.3. Visual effects

This section assesses the effects of the impacts of the Proposed Scheme on the visual amenity of the identified visual receptors, with reference to the construction and operational periods.

Table 9.8 states the magnitude of impact for each visual receptor and states the significance of effect on each receptor during construction, in Years 1-2 after completion (when landscape mitigation / vegetation reinstatement has been implemented but is not yet established) and in Year 5 (when any landscape mitigation / vegetation reinstatement is reasonably well established). This assessment takes into consideration the mitigation measures embedded within the Proposed Scheme design described in Chapter 3.

Table 9.8 Visual impact assessment - significance of effects during construction and operation
Locations of visual receptors are shown on Figures 9.3 and 9.4 in Appendix A.

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
Public Rights of Way							
Footpath BW 8/6 (length of 1.2km)	Medium	0-100	Up to 180°	Path within construction working area. On completion, bank raising and WFD measures will be visible at close quarters. In Year 5+, adverse impacts from bank raising and beneficial impacts from WFD measures likely to balance out to overall negligible effect.	High adverse magnitude Major – Moderate adverse effect	Low adverse magnitude Moderate – Minor adverse effect	Negligible magnitude Negligible effect
Footpath BW 36/5 (length of 2.7km)	Medium	0-100+	Up to 180°	Path within construction working area. On completion, bank raising and WFD measures will be visible at close quarters. In Year 5+, adverse impacts from bank raising and beneficial impacts from WFD measures likely to	High adverse magnitude Major – Moderate adverse effect	Low adverse magnitude Moderate – Minor adverse effect	Negligible magnitude Negligible effect

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
				balance out to overall negligible effect.			
Bridleway BW 8/16 (length of 1.1km)	Medium	380+	Up to 90°	Path runs parallel to KSD for 650m with little intervening screening.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 8/20 (length of 650m)	Medium	0-380	Up to 180°	Path runs perpendicular to KSD with little intervening screening. East end of path adjoins KSD footpath BW 8/6.	Medium adverse magnitude Moderate adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 8/18 (length of 650m)	Medium	402+	Up to 90°	Path runs diagonally away from KSD with little intervening screening.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 36/8 (length of 1.7 km)	Medium	0-700+	Up to 180°	Path runs perpendicular to KSD with little intervening screening. East end of path adjoins KSD footpath BW 36/5.	Medium adverse magnitude Moderate adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
Footpath BW 31/16 (length of 570m)	Medium	0-570+	Up to 180°	Path runs perpendicular to KSD with little intervening screening. South end of path adjoins KSD footpath BW 36/5.	Medium adverse magnitude Moderate adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Bridleway BW 31/11 (length of 350m)	Medium	800+	Up to 50°	Path runs diagonally away from KSD with little intervening screening.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 20/23 (length of 1.8km)	Medium	80-680	Up to 70°	Views of KSD works at west end and more distant views of Lower Sowy works across fields.	Low adverse magnitude Moderate – Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 21/19 (length of 440m)	Medium	715+	Up to 50°	Distant views south of Lower Sowy works across fields.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footpath BW 20/13 (length of 255m)	Medium	360+	Up to 50°	Distant partially screened views north of Lower Sowy works across fields.	Low adverse magnitude	Negligible magnitude	Negligible magnitude

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
					Minor adverse effect	Negligible effect	Negligible effect
Footpath L1/8 (length of 3.2km)	Medium	50+	Up to 160°	Elevated views from Parrett banks over intermittent bank raising works on Upper Sowy.	Medium adverse magnitude Moderate adverse effect	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect
Footpath L1/3 to north of R. Sowy (length of 940m)	Medium	325+	Up to 60°	Distant views south over fields to intermittent bank raising works on Upper Sowy.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Footways adjacent to fill material haul routes	Low	2+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Minor adverse effect	N/A	N/A
Private properties							
Farmhouse on Sutton Hams	High	790	Up to 110°	Distant elevated views south over fields to intermittent bank raising works on KSD.	Low adverse magnitude	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
					Moderate – Minor adverse effect		
4 properties on east edge of Westonzoyland	High	700	Up to 10°	Distant restricted views south over fields to temporary soil reprocessing plant.	Low adverse magnitude Moderate – Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Manor Farm Greylake	High	450+	Up to 60°	Distant partially filtered views north over fields to intermittent bank raising works and temporary material stockpiles on Lower Sowy.	Low adverse magnitude Moderate – minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Shride Farm nr. Othery	High	475+	Up to 80°	Distant views east over fields to bank raising works on Lower Sowy.	Low adverse magnitude Moderate – minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Bennett's Farm nr. Othery	High	480+	Up to 80°	Distant views east over fields to bank raising works on Lower Sowy.	Low adverse magnitude	Negligible magnitude	Negligible magnitude

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
					Moderate – minor adverse effect	Negligible effect	Negligible effect
Riverside Stathe	High	580	Up to 10°	Distant elevated oblique views to bank raising works on Upper Sowy.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Riverside Farm Oath	High	130+	Up to 130°	Elevated views to bank raising works on Upper Sowy.	Low adverse magnitude Moderate adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
The Croft Oath	High	130+	Up to 130°	Elevated views to bank raising works on Upper Sowy.	Low adverse magnitude Moderate adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Aller Court Farm Aller	High	820+	Up to 30°	Distant, slightly elevated views to bank raising works on Upper Sowy.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
14 properties in Middlezoy	High	5+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Moderate adverse effect	N/A	N/A
14 properties in Othery	High	5+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Moderate adverse effect	N/A	N/A
Seven properties in Greylake	High	5+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer movements per day for approximately four weeks.	Low adverse magnitude Moderate adverse effect	N/A	N/A
109 properties in Aller	High	5+	Up to 180°	Intermittent views of an average 2 HGV journeys per day for 1 week.	Low adverse magnitude Minor adverse effect	N/A	N/A
11 properties in Combe	High	5+	Up to 180°	Intermittent views of an average 2 HGV journeys per day for 1 week.	Low adverse magnitude	N/A	N/A

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
					Minor adverse effect		
Commercial / industrial / farm premises							
Springway Industrial Estate	Low	30+	Up to 140°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Medium adverse magnitude Moderate - minor adverse effect	N/A	N/A
16 premises to the west of Beer Wall	Low	5+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Minor adverse effect	N/A	N/A
10 premises to the east of Beer Wall	Low	5+	Up to 180°	Intermittent views of an average 18 HGV and 19 tractor and trailer movements per day for approximately four weeks.	Low adverse magnitude Minor adverse – negligible effect	N/A	N/A
Other receptors							

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
Anglers along the KSD	Medium	0+	Up to 180°	Access along KSD will be closed during construction. On completion, bank raising and WFD measures will be visible at close quarters.	High adverse magnitude Major – moderate adverse effect	Low adverse magnitude Moderate – minor adverse effect	Negligible magnitude Negligible effect
Agricultural workers in fields adjacent to works	Low	10+	Up to 180°	Close views of works, stockpiles and HGV/tractor and trailers during construction and raised flood embankments and WFD measures on completion	Low adverse magnitude Moderate – minor adverse effect	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect
Road users							
A361 adjacent to Lower Sowy crossing (length of 520m)	Low	20+	Up to 180°	Fleeting views of works and stockpiles during construction and raised flood embankments on completion.	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
A372 adjacent to Beer Wall (length of 500m)	Low	20+	Up to 180°	Fleeting views of works and stockpiles during construction and raised	Low adverse magnitude Minor adverse effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
				flood embankments on completion.			
Beer Drove	Low	800+	Up to 30°	Distant views of works and stockpiles during construction and raised flood embankments on completion.	Low adverse magnitude Minor adverse – negligible effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
Aller Drove adjacent to Upper Sowy crossing (length of 50m)	Low	120+	Up to 10°	Fleeting views of works during construction and raised flood embankments on completion.	Low adverse magnitude Minor adverse – negligible effect	Negligible magnitude Negligible effect	Negligible magnitude Negligible effect
A372 between Westonzoyland and Beer Wall	Low	3+	Up to 90°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Minor adverse effect	N/A	N/A
A372 between Beer Wall and Combe	Low	3+	Up to 90°	Intermittent views of an average 2 HGV journeys per day for 1 week.	Low adverse magnitude Minor adverse – negligible effect	N/A	N/A

Receptor	Sensitivity	Dist (m)	Arc of view	Changes to view as a result of the Proposed Scheme	Magnitude of impact and significance of effect during construction	Magnitude of impact and significance of effect during operation Years 1-2	Magnitude of impact and significance of effect during operation Year 5+
Oliver's Road between A372 and A361	Low	3+	Up to 90°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Minor adverse effect	N/A	N/A
A361 between A372 and Lower Sowy crossing	Low	3+	Up to 90°	Intermittent views of an average 18 HGV and 19 tractor and trailer journeys per day for approximately four weeks.	Low adverse magnitude Minor adverse effect	N/A	N/A
Aller Drove between Aller and Pathe	Low	3+	Up to 90°	Intermittent views of an average 2 HGV movements per day for 1 week.	Low adverse magnitude Minor adverse – Negligible effect	N/A	N/A

9.6. Mitigation

On completion of the embankment re-profiling and raising works and the excavation of the WFD enhancements, the following mitigation measures will be implemented to ameliorate the remaining adverse landscape and visual impacts:

The embankment re-profiling and raising works will create approximately 6.7ha of exposed bare earth on completion of the earthworks phase. Additional areas of bare earth may be generated by temporary access routes and working areas. These areas will be subject to pre-seeding preparatory works (weed control and cultivation) and seeded with the following seed mixes

- Along the KSD, the raised flood embankments (totalling maximum of approximately 2.8ha) will be seeded with a bespoke NWG (or other appropriate) seed mix containing 100% grass species with a soil-stabilising function, the majority of which are species listed as present within the King's Sedgemoor SSSI Citation (see the LMP in Appendix I for full details).
- Along the Lower Sowy, the raised flood embankments (totalling a maximum of approximately 3.9ha) will be seeded with a bespoke NWG (or other appropriate) seed mix containing 100% grass species with a soil-stabilising function. A substantial proportion of the proposed species are listed as present within the King's Sedgemoor SSSI Citation (see the LMP in Appendix I for full details).

Any newly created channel banks associated with the WFD enhancements and any maintenance access routes which require creation or reinstatement will be subject to pre-seeding preparatory works (weed control and cultivation) and seeded with a NWG, (or other appropriate) seed mix containing 100% grass species with a soil-stabilising function, the majority of which are species listed as present within the King's Sedgemoor SSSI Citation (see the LMP in Appendix L for full details).

The excavated embayments, two-stage channels and backwater channels and islands will be planted and seeded as follows:

- All newly created marginal shelves on the embayments and two-stage channels and the backwater channels will be planted with appropriate marginal wetland species introduced by installing (a) pre-vegetated coir rolls along the riverside edge of the marginal shelves or edges of the backwater channels; (b) pre-vegetated coir pallets closer to the landward edge of the marginal shelves and (c) re-planting any marginal plants lifted from the channel edges at WFD enhancement feature locations prior to excavation and stored on site in suitable locations.
- The backwater islands will be planted with appropriate wet scrub species (grey willow, goat willow, osier, downy birch, dog rose, elder, hawthorn and bramble) to provide biodiversity habitat value for a range of species and to provide long-term stabilisation of the island banks.
- Trees removed on the right banks of the KSD and Lower Sowy to enable flood embankment raising works will be replaced in suitable adjacent locations at a ratio of five replacement trees for every tree removed. Proposed replacement tree species comprise downy birch, white willow, goat willow and crack willow.

To mitigate the potential adverse impacts should the material excavated from the KSD and Sowy channel banks during the creation of two-stage channels,

embayments and backwaters prove to be mobile (liquid) silt, potential requirements for drying, dewatering or containment measures need to be considered in advance of excavation operations to minimise the potential for adverse landscape and visual amenity impacts associated with the deposition of any 'slurry' on the landward side of the flood embankments. The suitability of any silty material excavated from the channel for seeding following spreading will need to be confirmed by appropriate investigation. It is recommended that the potential risk of excessive ruderal weed growth on areas of silt deposition is mitigated by the implementation of an appropriate weed control and monitoring programme in the first two years following construction.

9.7. Conclusions and summary of residual effects

9.7.1. Residual effects

Following the implementation and establishment of the proposed mitigation measures, the following residual effects on the landscape resource and visual amenity are likely to remain.

Table 9.9 Residual effects where significant effects are predicted in the absence of mitigation

Receptor (sensitivity/value)	Nature of impact (magnitude)	Significance (pre-mitigation)	Mitigation	Residual effect
LCA 1: Peat Moor (medium)	Adverse impacts from extensive areas of bare ground, raised embankments and excavated WFD features (low, temporary)	Moderate-minor adverse	Seeding and planting. Planted WFD habitats will create beneficial impacts which will offset residual adverse impacts of raised embankments	Minor adverse (embankments) x Minor beneficial (WFD habitats) = Negligible (not significant)

Table 9.10 Residual visual effects where significant effects are predicted in the absence of mitigation

Receptor (sensitivity/value)	Nature of impact (magnitude)	Significance (pre-mitigation)	Mitigation	Residual effect
Footpaths BW 8/6 and BW 36/5 (medium)	Adverse impacts from extensive areas of bare ground, raised embankments and excavated WFD features (low, temporary)	Moderate-minor adverse	Seeding and planting. Planted WFD habitats will create beneficial impacts which will offset residual adverse impacts of raised embankments	Minor adverse (embankments) x Minor beneficial (WFD habitats) = Negligible (not significant)

9.7.2. Conclusion

During construction, the Proposed Scheme is likely to give rise to:

- Temporary, localised effects of moderate adverse, moderate-minor adverse and minor adverse significance on LCA1, LCA2 and LCA3 respectively.
- Temporary localised effects ranging from major-moderate to minor adverse – negligible on a range of visual receptors.

During the initial operational stage following completion, before landscape mitigation and vegetation reinstatement works have fully established, the Proposed Scheme is likely to give rise to:

- Short-term, localised effects of moderate-minor, minor and minor adverse – negligible significance on LCA1, LCA2 and LCA3 respectively.
- Short-term, localised effects ranging from moderate-minor to minor adverse on a proportion of visual receptors with the remainder experiencing negligible effects.

In the longer-term, once mitigation and vegetation reinstatement works have fully established, the Proposed Scheme is likely to result in both adverse and beneficial effects on landscape character and visual amenity. Localised adverse impacts are likely to remain from the increased size, angularity and visibility of raised flood embankments which will conflict with the open, topographically level character of the moors landscape and its associated visual amenity. Beneficial impacts are likely to arise as the newly created riparian wetland habitats along the KSD and Lower Soway mature. The combined effects of these adverse and beneficial impacts are likely to balance each other out and the overall longer-term operational impacts of the Proposed Scheme on landscape and visual amenity are considered likely to be neutral.