

CARDIGAN TIDAL FLOOD RISK MANAGEMENT SCHEME

Volume 1: Environmental Statement

Chapter 8 - Landscape Character and Visual
Amenity

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8. Landscape Character and Visual Amenity

8.1 Introduction

This chapter assesses the likely significant effects arising from the construction and operation of the Scheme on landscape character and visual amenity. This chapter details the baseline environment, assessment of likely significant effects, and where necessary, mitigation measures to avoid, reduce or minimise significant effects are proposed.

This chapter should be read alongside Chapters 1-4 (Introduction, Project Development, project description, and EIA Methodology). In addition, this chapter should also be read in the context of the following topic chapters due to potential interactions between topics:

- Chapter 5: Population and Human Health
- Chapter 7: Historic Environment
- Chapter 12: Cumulative Assessment.

This chapter should be read in conjunction with the following appendices:

- Appendix 8.1: LVIA Methodology
- Appendix 8.2: Landscape and Visual Assessment Tables
- Appendix 8.3: Photographic Record.

8.2 Competent expert evidence

This chapter has been prepared by Chartered Landscape Architects at Binnies:

- Principal Landscape Architect Heather Goodrick CMLI with over 13 years' experience including multiple LVIA's focussing on flood defence projects.
- Senior Landscape Architect Theresa Dendy CMLI with over 6 years' experience.

Refer to the full Statement of Competency for further details.

8.3 Planning policy and legislative context

This section describes the relevant legislation, policy and guidance that has been considered in developing the Scheme design, and in the assessment of effects with respect to landscape character and visual amenity. This legislation, policy and guidance have been reviewed and where applicable has informed the assessment through the identification and categorisation of sensitive receptors, requirements for mitigation, and the scope and/or method of assessment.

(a) International and National Policy

Planning Policy Wales

Planning Policy Wales (Edition 12, 2024) (PPW12) is published by the Welsh Government to promote the delivery of sustainable development and the well-being of Wales in line with legislation such as the Planning (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015.

Placemaking is an important part of PPW12. Aspects of placemaking most relevant to landscape character and visual amenity as assessed in this chapter are the integration of public realm designs into the landscape, and maintaining the identity, cultural associations and distinctive qualities of a place including the natural and built environment. The layout, form, scale and visual appearance of developments should be integral to development design, as should a development's relationship to its surrounding landscape. A development should respond to its surroundings in terms of its site layout and fabric, movement, built form, materials use, biodiversity and soundscape.

(b) Local Policy

Ceredigion County Council Local Development Plan 2007-2022

The Ceredigion County Council Local Development Plan 2007-2022 (LDP) contains strategies and policies that are highly relevant to landscape and visual amenity which are summarised below:

- Policy DM17: General Landscape requires that development does not have a significant negative effect on the qualities and special character of the visual, historic, geological, ecological or cultural landscapes and seascapes of Ceredigion by causing significant visual intrusion, being insensitively sited, introducing incompatible features or not being harmonious with the landscape, or by loss of traditional or important features. Where possible, development should enhance the qualities and special character of the landscape.
- Policy DM18: Special Landscape Areas (SLAs) requires that proposals for development within SLAs are assessed in relation to scale and nature of development and their ability to be accommodated without significant damage to, and where possible the enhancement of, the valued visual, historic, geological, ecological and cultural characteristics of the SLA.
- Policy DM19: Historic and Cultural Landscape requires that development does not significantly negatively affect the distinctive appearance, architectural integrity or setting of landscapes or buildings which are of historical or cultural importance.

Supplementary Planning Guidance documents ABERTEIFI/CARDIGAN Conservation Area Appraisal, and Special Landscape Areas, are also relevant and describe the special characteristics and features of Conservation Areas and SLAs respectively.

8.4 Assessment guidance

The following guidance documents were used in this assessment, as described in the Methodology (Appendix 8.1):

- Guidelines for Landscape and Visual Assessment (Third Edition) (GLVIA3) (Landscape Institute and IEMA, 2013)
- Landscape Institute Technical Guidance Note (TGN) 06/19: Visual Representation of Development Proposals, Landscape Institute, September 2019 (under review from January 2024).
- NRW guidance note 46 (GN46): Using LANDMAP in Landscape and Visual Impact Assessments (NRW, updated March 2023)
- An Approach to Landscape Character Assessment, Natural England, 2014
- LITGN-2024-01 (Landscape Institute, August 2024): Notes and Clarifications on aspects of the 3rd Edition of Guidelines on Landscape and Visual Impact Assessment.

8.5 Consultation

In relation to landscape character and visual amenity, Ceredigion County Council (CCC) were consulted in January 2025 in relation to the scope of the assessment, the selection of viewpoints, the methodology, and the extent of the LVIA study area. CCC responded requesting an additional viewpoint to those originally suggested, from the south bank of the River Teifi (Afon Teifi) near Cardigan Bridge. This viewpoint was added (viewpoint 10). Apart from this additional viewpoint, CCC commented '*We are satisfied with the radius of the viewpoints and consider that the works are unlikely to impact upon any viewpoint at a greater distance than No.13.*' No comments were received on the scope of the assessment, methodology, or extent of the LVIA study area.

A detailed list of all consultation undertaken in relation to this ES can be found in Chapter 4 EIA Methodology.

8.6 Scoped in receptors and potential effects

An EIA Scoping Opinion was provided by the Local Planning Authority in December 2023. An update to that Scoping Opinion was provided on the 16th October 2025. It was agreed that landscape character and visual amenity be scoped in, and that the methodologies provided, and used within this chapter, were appropriate.

The landscape character and visual amenity topic was scoped into the EIA due to the potential for likely significant effects during the construction and operational phases of the Scheme. The key landscape and visual changes associated with the Scheme include the construction of a flood defence wall and rock roll riverbank along the north bank of the Afon Teifi, changes to the riverbank footprint and mudflat extent, alterations to the existing plateau area beneath Cardigan Castle, and public realm improvements along Strand including paving, planting and street trees. During construction temporary impacts would arise from construction plant, site compounds, haul routes and temporary sheet pile structures.

Tables 8-1 and 8-2 outline the likely significant effects which are to be assessed within this chapter, as described in the EIA Scoping Opinion.

Table 8-1 Scoped in Likely Significant Effects (construction)

Environmental Effect	Receptor
Change to landscape character during construction from the introduction of new elements such as site compounds and access routes, welfare facilities, hoarding, construction plant, material storage or stockpiling, or from removal of buildings, trees or vegetation to construct the Scheme.	LCA1 Cardigan urban area (host character area) LCA2 River and intertidal habitat (host character area) LCA4 Southern enclosed slopes (intervisible with the Scheme at a distance of 180m).
Change to visual amenity during construction from the addition of site compounds and access routes, welfare, hoarding, construction plant, material storage or stockpiling; or from the appearance of the flood defence wall before final finishes are applied. Where buildings, trees or vegetation are removed to enable construction, currently hidden views could be opened up, or hoarding or other construction activities could block views.	Local residents Occupiers of buildings used for employment Pedestrians, cyclists and road users Visitors to attractions, such as the Cardigan Castle and Gardens Members of the public enjoying hospitality and public amenity locations Individuals and groups using the river Individuals and groups participating in outdoor leisure activities, such as walking and running, especially those using Public Rights of Way (PRoW) or the Wales Coast Path.

Table 8-2 Scoped in Likely Significant Effects (operation)

Environmental Effect	Receptor
Change to landscape character during operation from the introduction of new elements and materials to build the flood defence Scheme or associated public realm enhancements, or from the removal or degradation of an element or feature which formed a key part of the character of the area. There could be a change in appearance of the river corridor resulting from hydrological change as a result of the Scheme.	As construction receptors
Change to visual amenity during operation from the introduction of new elements and materials to build the Scheme or associated public realm enhancements, or from blocking or limiting of existing views. There could be a change in appearance of the river corridor resulting from hydrological change as a result of the Scheme.	As construction receptors

(a) Landscape Character

As described in the methodology (see Section 8.7 and Appendix 8.1), the study area has been divided into appropriately-scaled Landscape Character Areas (LCAs) by the Landscape Architect and these are shown on Figure 8.1 Landscape Character. Areas which may experience likely significant effects to their landscape character as a result of the Scheme are scoped into the assessment and are noted below:

- LCA1 - Cardigan urban area (host character area)
- LCA2 - River and intertidal habitat (host character area)
- LCA4 - Southern enclosed slopes (intervisible with the Scheme at a distance of 180m).

LCA3 and LCA5 have been scoped out of the assessment due to distance from the Scheme, very limited intervisibility with the Scheme, and views of Cardigan not being a key feature of their character.

Impacts on the Pembrokeshire Coast National Park have been scoped out of this assessment; at a distance of 2.9km the National Park is not likely to experience significant impacts as part of the Scheme. In their 2025 Scoping Opinion Addendum, NRW Development planning Advisor commented: *'The National Park boundary lies approximately 3km away to the west and north-west at its closest points. We do not consider there is likely to be an impact on the National Park at this distance.'*

(b) Visual Amenity

Given the Scheme's location in the centre of Cardigan town, within an estuary and surrounded by elevated countryside, the range of receptors that could potentially experience visual effects from the Scheme is broad and includes the following:

- Local residents
- Occupiers of buildings used for employment
- Pedestrians
- Road users
- Visitors to attractions, such as the Cardigan Castle and Gardens
- Members of the public enjoying hospitality and public amenity locations
- Individuals and groups using the river
- Cyclists on National Cycle Network Routes
- Individuals and groups participating in outdoor leisure activities, such as walking and running, especially those using PRoW or the Wales Coast Path.

All of the above were identified as potentially experiencing a significant change in their views depending on their location and proximity to the Scheme.

8.7 Methodology

A summary of the methodology is provided in this chapter with full detail in Appendix 8.1.

The purpose of this section is to describe how likely significant effects relating to landscape character and visual amenity have been assessed. Further detail on this methodology can be found in Appendix 8.1, which differs from that used for other EIA topics. In line with GLVIA3, a key part of the assessment of effects on landscape character and visual amenity is the application of professional judgement, applying a qualitative judgement rather than measurable parameters which apply to other EIA topics. In line with GLVIA3, judgements regarding magnitude are derived from several factors, and not only from the extent of a receptor affected, thereby differing from the methodology for other ES topics (which is described in Chapter 4: EIA Methodology). Similarly, judgements regarding receptor sensitivity in LVIA are made using combined judgements of susceptibility and value, which differs from other ES topics. Chapter 4: EIA Methodology explains that ES topic chapters may use slightly different judgement criteria or terminology depending on the industry best practice guidance utilised, and that where criteria and terminology do vary, this is outlined within the topic chapter. Definitions of duration of effects are the same as for other ES topics.

(a) Definition of study area

As explained in Chapter 4: EIA Methodology, the study area is specific to topic chapters. The study area for LVIA was established using guidance in GLVIA3 and GN46 (NRW, updated March 2023). An initial search area was first set at 3km, as although the Scheme is of low vertical elevation, there is surrounding high ground from which the Scheme could be visible. A Zone of Theoretical Visibility (ZTV) was undertaken for this 3km search area, which shows where the Scheme would theoretically be visible from. The study area was then derived from the landscape character areas falling within (or partly within) the 3km search area, and which have intervisibility with the Scheme as shown on the ZTV (see Figure 8.2).

The resultant study area is shown on Figure 8.1 Landscape Character. This process results in a study area which is a combination of the wider landscape around the Scheme which may be influenced in a significant manner and extent of the area from which the Scheme is potentially visible.

(b) Baseline information

The baseline for consideration of landscape and visual effects was gathered through desk study (including LANDMAP analysis, national landscape character and marine character assessments and ZTV analysis) and a site visit by the Landscape Architects. The site visit was undertaken on 11th and 12th February 2025 by Heather Goodrick CMLI and Theresa Dendy CMLI.

The first stage of understanding the visual amenity baseline was the establishment of the ZTV (Figure 8.2), which shows the areas from which the development is theoretically visible. Analysis of the ZTV informed identification of the 'visual receptors', as well as aiding viewpoint selection and indicating the development's potential influence on the wider landscape.

Photographs showing views from a number of representative viewpoints were taken to record the visual baseline, and all photographic viewpoints are located within areas shown to have visibility in the ZTV. Viewpoints frequented by members of the public, such as from PRow or settlements, as well as viewpoints from which the proposed development is likely to be prominent, are favoured as they are likely to represent a greater concentration of potentially

affected users. Baseline photographs and Type 1 visualisations (annotated viewpoint photographs) are used to inform the appraisal process.

For landscape character, in the absence of a published landscape character assessment at a local level, the study area has been divided into appropriately-scaled Landscape Character Areas (LCAs) by the Landscape Architect.

(c) Significance

The significance of landscape or visual effects has been determined by a consideration of the sensitivity of the receptor and the magnitude of change and is assessed as major, major-moderate, moderate, moderate-minor, minor, minor-negligible or negligible, as described in Appendix 8.1.

Landscape and visual effects can be positive or negative and, in some instances, may be considered neutral. Neutral effects are those which overall are neither negative nor positive but may incorporate a combination of both.

Sensitivity

For assessing landscape effects sensitivity is a combination of the landscape receptor's susceptibility to the type and nature of change and the value attached to the landscape receptor. For visual effects sensitivity is a combination of the susceptibility of the visual receptor and the value attached to particular views.

Magnitude of Change

The magnitude of landscape or visual change arising from the proposed development at any particular location has been assessed in terms of its size or scale, geographic extent of the area or receptor that is influenced and its duration and reversibility. Scale of effect is the first and primary factor in determining magnitude. Geographical extent and duration of the effect are modifying factors to the overall magnitude judgement which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale. The stage 1 result is achieved by combining the geographic extent with the scale of change, which is compared against duration and reversibility to reflect the magnitude of change.

Significance

Where the effect has been classified as Major or Major-Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Moderate effects could be significant; where 'Moderate' effects are predicted, professional judgement is applied to ensure that the potential for significant effects arising has been thoroughly considered. Where an effect falls at Moderate, the judgement on EIA significance will take account of the combination of receptor sensitivity and magnitude and the underlying considerations which informed those judgements; the scale and nature of change, geographic extent, duration/reversibility, and the importance or susceptibility of the receptor. Moderate-Minor effects are not considered to be significant.

8.8 Baseline environment and likely future evolution

The section below describes the baseline environment and its likely future evolution. The current baseline environment scenario refers to the current state of environmental characteristics within the Scheme Area. The description of the likely future evolution of the baseline addresses how current conditions are expected to change without the Scheme, including consented developments that are not yet present in the landscape but are expected to be constructed.

(a) Landscape designations and value

Set out below are the landscape designations relevant to the Scheme. Heritage designations that are most relevant to the landscape and visual assessment are noted as they can affect the sensitivity of a receptor or the value attached to a receptor, or affect the character of an area, and therefore affect this assessment. For an assessment of impacts on heritage designations in their own right, refer to the Chapter 7: Historic Environment.

Landscape designations

Cardigan is located approximately 2.9km east of Pembrokeshire Coast National Park. National Parks are a landscape designation at a national level, aimed at protecting the highest quality landscapes in the country. However, at a distance of 2.9km, it is not considered likely that Pembrokeshire Coast National Park would be impacted by the Scheme, and it is therefore not discussed further.

The Scheme is located on the periphery of Special Landscape Area (SLA) 7: Teifi Valley as defined by Ceredigion County Council, which is a non-statutory landscape designation. SLAs are protected through local planning policy, the key policy of relevance being DM18: Special Landscape Areas (Ceredigion County Council, 2013), as described in Section 8.3. SLA7 is shown on Figure 8.1 Landscape Character and is defined for its distinctive and coherent sinuous river valley and wooded tributaries, with the Cors Caron raised mire at its head and a number of international and national nature conservation designations along its length. The SLA description does account for the character of the river valley changing as it passes through Cardigan where it is constricted by the urban surroundings, and also for being open with mudflats downstream of Cardigan. Incised valley sides to tributaries dominated by woodland, some small settlements and farms, and a sense of enclosure, are described as being characteristic upstream of Cardigan. SLA7 is assessed in this chapter as a receptor.

A small number of trees have been identified within the Scheme Area. The majority of the Scheme Area lies within a conservation area, and trees are therefore subject to the relevant statutory controls. There are no Tree Preservation Orders within the Scheme Area.

Heritage designations

The likely significant effects upon heritage designations as receptors are assessed in Chapter 7: Historic Environment and are not described in this chapter. However, heritage designations can influence the landscape character baseline and/or the value attached to landscape character or people's views, and are described for this reason in this chapter.

Except for the Gloster Row Car Park, the Scheme lies on the periphery of Cardigan Conservation Area, the boundary of which runs along the mean high water mark on the Afon Teifi. Key features of the Conservation Area are described as the prevalence of historic buildings, the

medieval street layout, the prominent Cardigan Castle and historic importance of the Afon Teifi. There is a further Conservation Area within the study area, at St Dogmaels, 1.2km west of the Scheme Area.

There are three Scheduled Monuments within the immediate vicinity of the Scheme. Cardigan Bridge is located on the western edge of the Scheme Area and is both a Scheduled Monument and a Grade II* Listed Building (LB Ref. 10456). Cardigan Castle, adjacent to the Scheme Area in the north-west, is a Scheduled Monument, Grade I Listed Building (LB ref.10458), and Grade II Registered Historic Park and Garden (Parks and Gardens Register Number: PGW (Dy) 72(CER)). Cardigan Town Walls Scheduled Monument (the remains of two stretches of defensive town wall) is located 100m east of the Scheme Area.

There are a further 31 listed buildings within 100m of the Scheme Area. Four of these are Grade II* listed. These include Castle Green House (LB Ref.10459) approximately 80m north of the Scheme Area, The Parish Church of St Mary (LB Ref.10476), a church with 12th century origins lying 70m to the northeast of the Scheme Area, No.7 St Mary's Street (LB Ref. 10529), a late 18th or early 19th century gentry house, which lies 90m to the northwest of the Scheme Area, and Avondale (LB Ref. 10539) which fronts St Mary's Street 60m to the north of the Scheme Area.

The remainder of the listed buildings are Grade II listed, the majority being post-medieval structures along Bridge Street, St Mary's Street and Church Street associated with the expansion in the town during the 18th and 19th centuries.

The Scheme Area, and much of the historic core of Cardigan lies within the Lower Teifi Valley Landscape of Special Historic Interest (HLW(D)14). This area encompasses the lower Teifi valley from the estuary to the confluence with the Afon Cych and the area around Cenarth 16.5km upriver. Within this the Scheme Area lies within Historic Landscape Character Area (HLCA) 410 Cardigan, a character area drawn around the urban extent of Cardigan.

(b) Landscape Character Baseline

Landscape character assessments exist at various scales. At a national level, Cardigan is situated in National Landscape Character Area (NLCA) 40: Dyffryn Teifi /Teifi Valley, and the Afon (River) Teifi is in National Marine Character Area (NMCA) 16: Bae Ceredigion (de)/Cardigan Bay (South). The Scheme sits on the border of these two character areas.

National Landscape Character Area (NLCA) 40: Dyffryn Teifi /Teifi Valley: The NLCA explains how the estuary in which the town is located was formed and the town's historical character and development. The historic settlement pattern still exists in the town, represented by the old stone bridge across the Afon Teifi (Cardigan Bridge) and main roads following the bottom of the valley sides.

National Marine Character Area (NMCA) 16: Bae Ceredigion (de)/Cardigan Bay (South): The NMCA focuses on coastal waters. It describes how Cardigan is the meeting point for the Afon Teifi and the sea and how this is part of a wider SSSI and SAC designated river system. It also describes the maritime cultural and social influences on the landscape.

Teifi Estuary Seascape Character Area (Pembrokeshire Coast National Park SCA1) includes the tidal estuary from Cardigan Bridge and west through the valley to the open water of Cardigan Bay. As a smaller character area than NLCAs and NMCAs, it provides a more focussed description of the estuary on its approach to Cardigan. It describes the estuary as having natural

scenic beauty modified by historic coastal settlement. Relevant characteristics of the area include the mature deciduous trees lining the estuary west of Cardigan around St Dogmaels, contained views in the estuary, many moorings and slipways and activity on the water and the built waterfront at Cardigan.

As described in the Methodology, these character areas are considered too large-scale to form receptors in their own right, and, in the absence of a published landscape character assessment at a local level, the landscape architect has defined Landscape Character Areas (LCAs) on which to assess the impacts of the Scheme. The LCAs identified within the study area are shown on Figure 8.1 Landscape Character, and the baseline character of the three LCAs scoped into the assessment are described in Table 8-3.

Two of the character areas, LCA1 Cardigan urban area and LCA2 River and intertidal habitat, lie partially within the Scheme Area and are both identified as host character areas. LCA1 Cardigan urban area extends to the north and south of the Scheme, whilst LCA2 River and intertidal habitat extends along the Afon Teifi to the east as far as Teifi Marshes, and to the west as far as the Ceredigion coastline. Teifi Marshes lies at the end of the tidal reach of the Afon Teifi. LCA4 Southern enclosed slopes lies 180m south west of the Scheme, and has intervisibility with the Scheme as shown by the ZTV.

It is likely that in future the river level within the Teifi would rise due to climate change, changing the character of the river at low tide as it passes through Cardigan. Currently at low tide mudflats are exposed which are characteristic of the tidal range of the Afon Teifi, although these are inundated at high tide. In the future, exposure of these mudflats would become less frequent.

There are no consented developments considered likely to change the future character of the area. There is one major development currently under construction within proximity of the Scheme, a proposal for the construction of a mixed-use development which includes office workspace, café, residential development, storage building and associated works, located at the former Cardigan and District Hospital Pont-y-cleifion to the east of the Scheme, on the eastern edge of Cardigan town (Application number: A240176). This development was not screened in to require EIA. The buildings proposed as part of this application are set back from the river, with the riverside area comprising soft landscaping. Apart from the historic core represented by Cardigan Conservation Area, riverside buildings through Cardigan as well as urban fringe developments are largely modern and constructed of a variety of building styles and materials; construction of consented development A240176 would not alter this baseline. Construction started on this development in June 2026, with a planned 3-year construction programme.

Table 8-3 Landscape Character Areas description

Landscape Character Area	Description	Distance from development
LCA1 - Cardigan urban area	Urban settlement comprising intact historic core with traditional building materials of slate and painted render. There is a strong medieval street pattern, based around Cardigan Castle on a promontory overlooking the river. The historic settlement is designated as Cardigan Conservation Area and there are other historic landmarks such as Cardigan Bridge, which is a Scheduled Monument along with the castle. Cardigan Castle is a key feature within the area, initially built with local stone and restored with Cilgerran slate and has strong cultural associations as	0m

	the site of the first Eisteddfod. Buildings are close-knit, often facing straight onto the highway without front gardens. Modern commercial buildings on the settlement edge are not in keeping with the traditional historic core and detract from the integrity of the landscape; south of the river lies a commercial/industrial area, which does not have a cohesive built form but comprises a variety of construction materials including modern buildings and warehouses, which is mirrored in some warehouse style buildings north of the river, either side of the historic core. Housing developments are found to the north, and across the river to the south. The settlement is on gently sloping land in a valley bottom along the Afon Teifi, with which the town has a strong association, and there are some attractive views along the riverside, though marred by the industrial riverside development. The character is small-scale and enclosed due to built form, and views are generally short-range. The interface with the river is important, but the river is only visible from the immediate surrounding area; from elsewhere within the Cardigan urban area the interrelationship with the river is not apparent. The A487 forms a boundary between the urban area of Cardigan and the adjacent farmland to the east. The settlement continues on the south bank of the river, before the southern boundary of the LCA marked by steep pastoral slopes. This LCA is bisected by the river and intertidal habitat, which forms its own character area.	
LCA2 - River and intertidal habitat	Riverine environment comprising intertidal mudflats and coastal saltmarsh, and including the intertidal area within Teifi Marshes Nature Reserve. A low lying area, open with no settlements, though stone is used as an occasional building material and varied floodwall construction detracts from the unity of the area. There are extensive, sweeping mudflats through which sinuous channels form in changing patterns, with mudflats inundated at high tide. There is a sense of tranquillity, remoteness and wildness, and a strong, distinctive character. There are attractive views out to the surrounding hills which form a backdrop to the area, but detractive views of corrugated metal warehouses and industrial style buildings at Cardigan and a caravan park north of the river. The character area supports several protected species and habitats but recreational pressure, coastal defences and climate change are potential threats to the habitats within the area. Upstream of Cardigan masses of reeds line the channel edges and cover the nature reserve. Through and	0m

	downstream of Cardigan the reeds dissipate. Although at high tide the channel is constrained by walls on both sides as it passes through Cardigan, the intertidal character of the exposed mudflats is still present at low tide. Due to curves in the river alignment, not a high proportion of the river can be seen at any one time, until it widens out at the river mouth; until then views are mid-range.	
LCA4 - Southern enclosed slopes	A rural environment characterised by steep sided hills with incised valleys, small scale regular field pattern and the settlement of St Dogmaels, which has steep, narrow, winding roads with houses clustered closely together, and the motte (Old Castle Mound Scheduled Monument) visible amongst dwellings. A large part of St Dogmaels is designated as St Dogmaels Conservation Area, centred around the motte and including ribbon development along roads. Pembrokeshire County Council have not yet published a Conservation Area Appraisal for St Dogmaels Conservation Area to describe its special character and distinctiveness. Aside from St Dogmaels, settlement largely consists of farmsteads of varying scale and including some Listed Buildings. Fields are bounded by hedgebanks, intact hedgerows with trees and woodland is present in valley bottoms. The changing landform and in places dense woodland cover provides a sense of closeness and restricts views. There is little intervisibility with adjacent character areas, though there are occasional views out over the Teifi valley and estuary. The southern boundary of this character area is marked by the change in topography, field pattern, vegetation typology and perceptual qualities of the plateau above the slopes. The urban settlement of Cardigan and the Afon Teifi form boundaries to the north.	180m

The sensitivity of each of these three LCAs as receptors is set out in Tables 8-4 to 8-6. As described in the Methodology, sensitivity of a receptor is derived from its susceptibility to change, and its value.

Table 8-4 Cardigan urban area sensitivity

Landscape receptor		
LCA1 - Cardigan urban area		
Susceptibility of receptor	Value attached to the landscape	Sensitivity of the receptor
Low	National	Medium
Rationale		
Cardigan urban area is judged to have a low susceptibility to change, as it is judged to be able to accommodate the type and nature of the Scheme. This is an urban landscape, with existing built form, including linear features, and a variety of construction materials. Expansion of the town has resulted in modern commercial and industrial buildings along the river frontage and on the edges of the settlement, which are not in keeping with the historic core and amongst which new structures would be less out of place. The character is enclosed and contained, with narrow streets, giving the town greater ability to absorb new development. Whilst the interface with the river is important, it is only apparent in very limited locations within the character area, with much of the river frontage blocked by existing modern development. The value attached to this landscape is judged to be national, due to cultural associations, designated assets and intactness. The historic core of this area is defined as a Conservation Area, and contains the Scheduled Monuments of Cardigan Castle and Cardigan Town Walls. Cardigan Castle is also a Registered Park and Garden and Listed Building, and there are several other Listed Buildings within the area. There are cultural associations with the arts, with Cardigan the first host of the national Eisteddfod festival. The character of the historic core is fairly intact and distinctive, though incongruous elements increase away from the historic centre, and towards the edges of the character area. The combination of low susceptibility and national value means that this receptor has medium sensitivity.		

Table 8-5 River and intertidal habitat sensitivity

Landscape receptor		
LCA2 - River and intertidal habitat		
Susceptibility of receptor	Value attached to the landscape	Sensitivity of the receptor
High	National	High
Rationale		
The river and intertidal habitat is a large scale, flat and open landscape with mid-range views and a sinuous form, in which a linear built structure may be highly visible and appear out of place. There is little existing built form in the area. The landscape is judged to be highly susceptible to change from the type and nature of the proposed development. The landscape is locally designated for the value and importance of its landscape through Special Landscape Area (SLA) 7 and also boasts several natural heritage designations for ecological and geomorphological interest. Supplementary Planning Guidance: Special		

Landscape Areas (Ceredigion County Council, adopted 2014) identifies that impacts upon estuarine habitats and landscape is a key issue that could affect this SLA. The river has a strong cultural influence on the surrounding land that it borders, including the settlement of Cardigan. The landscape is largely intact, in good condition with few incongruous elements. It is a distinctive feature within views which are an important part of the experience of recreation and amenity, including from the Wales Coast Path. The landscape is tranquil and contains limited evidence of human intervention, and forms an important blue infrastructure function. The value of this landscape is therefore judged to be national.

The combination of high susceptibility and national value means this receptor has high sensitivity.

Table 8-6 Southern enclosed slopes sensitivity

Landscape receptor		
LCA4 - Southern enclosed slopes		
Susceptibility of receptor	Value attached to the landscape	Sensitivity of the receptor
Medium	Regional	Medium
Rationale		
The Southern enclosed slopes are considered to have a medium susceptibility to change from the type and nature of the proposed development. This is a small scale landscape with an intimate character, containing a mix of some built form and rural landscape. Whilst built structures are present, they are not large scale and a long, linear feature may therefore appear out of place. Furthermore, built features are traditional in form and the area does not contain a wide variety of built vernacular. Part of the area is defined as St Dogmaels Conservation Area. Views however are short range due to the contained nature of the landscape.		
The value attached to this landscape is judged to be regional. The landscape includes the Old Castle Mound at St Dogmaels and some Listed Buildings contribute to the cultural heritage value. The landscape is intact and coherent, though is not notably rare. Experience of the landscape is important for recreation and amenity, and the landscape is peaceful with some areas of remoteness away from settlement.		
The combination of medium susceptibility and regional value means that this receptor has medium sensitivity.		

SLA7 is also assessed in this chapter as a receptor. The sensitivity of SLA7 is set out in table 8-7.

Table 8-7 SLA7: Teifi Valley sensitivity

Landscape receptor		
SLA 7: Teifi Valley		
Susceptibility of receptor	Value attached to the landscape	Sensitivity of the receptor
High	Regional	High-Medium
Rationale		
As a landscape formed by natural processes, SLA7 is considered highly susceptible to change from the introduction of built form. Key characteristics of the SLA are the sinuous river valley with open mudflats downstream of Cardigan, incised valley sides to tributaries with wooded slopes, and lack of built form though there are some small settlements and farms. In this context, linear built form would be out of place and it is not considered that the landscape could absorb it without undue impacts. As a non-statutory designation, SLA7 is considered to be of Regional value. The combination of high susceptibility and regional value means this receptor has high-medium sensitivity.		

(c) ZTV and the Visual Envelope

The Zone of Theoretical Visibility (ZTV) is shown on Figure 8.2 and has been used to aid the identification of those receptors that are likely to be most affected by the Scheme. An explanation of how the ZTV was derived is provided in the Methodology (Appendix 8.1).

The ZTV model shows that the main area of visibility is contained within the river corridor due to the Scheme's location in a built up urban area, where built form provides screening. This includes visibility from bridges crossing the river, and from the river banks.

The ZTV model is unable to show visibility through the underneath of bridges as the bridges are interpreted as solid shapes. Site verification confirmed that there are clear views from the east of Priory Bridge at the east end of the Scheme, but the structure of Cardigan Bridge to the west of the Scheme restricts views under it.

The model indicates partial views from fields to the southwest of Cardigan due to elevation, in areas where there is an absence of vegetation and buildings to impede views.

To the east of Cardigan as far as 3km away in limited locations the model indicates limited areas in fields where the Scheme would be visible, but from such a distance, given the height of the Scheme, it is unlikely that it would be easily discernible.

The ZTV shows small dots of visibility along field boundaries and within the town. These dots mark the location of trees. Due to their height the model identifies these locations as areas of visibility but have been discounted in our analysis.

(d) Visual Receptors

Visual receptors are *"the different groups of people who may experience views of the development"* (GLVIA, 3rd edition, para 6.3). In order to identify those groups who may be significantly affected the ZTV study, baseline desk study and site visits have been used.

As described in the Methodology (Appendix 8.1), receptors have been grouped to aid the assessment. The receptor groups in Table 8-8 are located within the study area and are likely to have visibility of the Scheme, as shown on the ZTV (Figure 8.2).

Table 8-8 Visual receptor groups

Receptor group	Description of view(s)	Approximate distance from Scheme
Residents of homes on Church Street and Strand on the north bank of the Afon Teifi	Properties are set back from the river, with gardens and (in the case of Church Street residents) Gloster Row car park between properties and the river. Vegetation and garden boundaries partially obscure views across the river. A limited number of residents have clear views to the river from gardens, with Pentood industrial estate visible on the opposite bank.	0-50m
Indoor users of buildings on the north bank of the Afon Teifi	The bathroom centre (including its offices) and the boat house have views looking directly on the river. The scout hut has oblique views onto the river. There are two industrial sheds adjacent to the river with no windows.	<5m
Users of recreational open spaces on the north bank of the Afon Teifi	The open spaces along the north bank (field of scout hut and boathouse; and Gloster Row car park) have uninterrupted views of the river in close proximity, with Pentood industrial estate visible on the opposite bank. From Gloster Row car park, there are long-range views east along the river corridor toward Teifi Marshes.	0-20m
Pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay	From Cardigan footbridge there are long-range views east along the river corridor toward Teifi Marshes. From Strand and Bridge Street pedestrians have views of the river over the existing low slate wall that follows the pavement on Strand and along the north bank towards Gloster Row car park. From Prince Charles Quay and the Grosvenor pub views are limited to the stretch between Cardigan Bridge and the bus stop on Strand. In all cases the river is seen with the backdrop of Pentood Industrial Estate and rising hills on the opposite bank; and in context of other built form on the north bank including Cardigan Castle and Bridge.	0-30m

Receptor group	Description of view(s)	Approximate distance from Scheme
Visitors to Cardigan Castle and Gardens	Visitors have glimpsed views towards Priory Bridge in the distance, Gloster Row car park and the north riverbank adjacent to the car park; and Strand between the Bathroom Centre and Cardigan Bridge. The rest of the north bank is obscured by vegetation and buildings.	30m
Residents of homes on Station Road on the south bank of the Afon Teifi	Properties are set back from the river, with localised views of the river visible between intervening industrial buildings and vegetation. Cardigan Castle is visible in the background.	> 100m
Workers at industrial premises on the south bank of the Afon Teifi	Occupiers of units have direct uninterrupted views across the river to the north bank (dependent on working in a building with windows or working outside). The urban area of Cardigan is visible on the north bank.	> 80m
Pedestrians and cyclists on riverside routes	Users of NCN along the south bank have direct views across to the north bank of the Afon Teifi between Cardigan Bridge and Priory Bridge, and long range views along the river corridor. Views become more oblique moving west from Priory Bridge. Priory Bridge is a raised vantage point affording a clear view of the entire length of the Scheme from Gloster Row car park to Cardigan Bridge.	> 75m
Road users	From Cardigan Bridge and Priory Bridge there are uninterrupted views of the north bank of the river, including existing slate walls. From Strand and Bridge Street, road users have views over the existing slate wall of the river (albeit broken by a metal railing fence and along the north bank towards Gloster Row car park.	2m-170m
Individuals and groups using the river	Users of the river have mid-range views east and west along the river corridor as far as bends in the river in either direction. Users of the river are at a lower elevation than other receptors, with existing river walls visible on both banks as users pass by Cardigan urban area (relative height depending on the tide), with the built form of Cardigan visible above eye level.	0-80m
Users of the Wales Coast Path	Views range from immediately adjacent the Scheme Area as the Coastal Path passes over Cardigan footbridge and along Bridge Street, to distant views from high ground to the west.	2m-400m

Receptor group	Description of view(s)	Approximate distance from Scheme
Users of Ceredigion Coast Path and other PRow in the wider area	There are distant and glimpsed views of the Scheme Area from PRow east and south of Cardigan. PRow along with other recreational routes are shown on Figure 5.2 and described in Chapter 5 Population and Human Health.	400m-2.5km
Residents of properties on Pont-y-Clefion (receptor for construction effects only)	Residents of properties on Pont-y-Clefion do not have intervisibility with the operational Scheme as shown by the ZTV, however they are close to or overlooking the northern compound which is accessed off Pont-y-Clefion. Direct views from these properties would be of Pont-y-Clefion and traffic along this road, with the former Cardigan and District Hospital Pont-y-Clefion development opposite; the properties do not directly face the compound location. The property closest to the compound location does however have side windows which would overlook the compound.	0-150m

The sensitivity of each of these receptors is set out in Table 8-9. As described in the Methodology, sensitivity of a receptor is derived from its susceptibility to change, and its value.

Susceptibility of visual amenity receptors is as defined in the Methodology:

- **High** - Local residents; users of outdoor recreation focussed on the appreciation of views including footpaths, beauty spots and picnic areas; people experiencing views to or from important features of physical, visual, cultural or historic interest.
- **Medium** - Local road users and travellers on trains. People engaged in outdoor recreation with some appreciation of the landscape e.g. road cycling, nature conservation, golf and water based recreation.
- **Low** - Users of facilities and commercial buildings (indoors) experiencing views from buildings. Workers both indoors and outside, as they are not engaged in an activity related to enjoyment of the view. Road and rail users on fast moving commuting or trunk routes. Visual receptors where views are incidental to the activity and/or location.

Table 8-9 Sensitivity of visual receptor groups

Receptor	Susceptibility	Value	Sensitivity
Residents of homes on the north bank of the Afon Teifi (Church Street and Strand)	High	Community	High-Medium
Indoor users of buildings on the north bank of the Afon Teifi	Low	Community	Low
Users of recreational open spaces on the north bank of the Afon Teifi	Medium	Community	Medium

Receptor	Susceptibility	Value	Sensitivity
Pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay	High	National	High
Visitors to Cardigan Castle and Gardens	High	National	High
Residents of homes on the south bank of the Afon Teifi (Station Road)	High	Community	High-Medium
Workers at industrial premises on the south bank of the Afon Teifi	Low	Regional	Medium-Low
Pedestrians and cyclists on riverside routes	High	Regional	High-Medium
Road users	Medium	National	High-Medium
Individuals and groups using the river	Medium	Regional	High-Medium
Users of the Wales Coast Path	High	National	High
Users of Ceredigion Coast Path and other PRow	High	Regional	High-Medium
Residents in properties close to or overlooking the northern compound	High	Community	High-Medium

(e) Site Fabric baseline

Strand (Plate 1) is a busy one-way road located in the west of the Scheme Area, in the setting of Cardigan Castle. There is a bus stop at the eastern end near a bathroom centre, though no seating or shelter are provided. The tarmac footway along the left carriageway of Strand is constrained by an existing low slate wall, and at the western end the topography is steep.

Between the Afon Teifi and the Strand footway is a lower plateau, where public access is restricted by the low wall. The plateau surface is paved, with metal railings along the riverside edge, and has become overgrown. Adjacent the bathroom centre is a DCWW outfall asset. The inspection chamber associated with the outfall asset has been clad sensitively, similar to Cardigan Castle walls, however it is surrounded by utilitarian metal railings which are incongruous.

Buildings are present along the north bank in a varied range of construction materials (Plate 2), including the bathroom centre showroom which is clad in timber, white painted bathroom centre offices, two corrugated metal warehouses, a boat house painted in a prominent bright blue colour, a pebble-dashed scout hut and residential properties. Properties are built close together and have a maximum height of two storeys. There is a shared grassed field between the boat house and scout hut.

At the eastern end of the Scheme Area, Gloster Row car park is a small, tarmac car park providing parking for 23 cars. A small grassed area is present adjacent to the car park and is publicly accessible.

The river is at a lower level than the surrounding land, and is constrained by river walls as it passes the Scheme area. The river walls on the north bank appear to be built of dark grey slate, but are disjointed and varied in height, with gaps comprising bare ground or short grass. The river bed has extensive mudflats (Plate 1), inundated at high tide.



Plate 1: view of Cardigan Castle and Bridge from the south bank, with Strand visible in front of the castle. Mudflats are exposed at low tide.



Plate 2: view of the north bank from Priory bridge, showing the mix of built form. Cardigan Castle and Bridge are visible downstream.

8.9 Assessment of effects

This section describes the outcomes of the assessment, identifying the likely significant effects on landscape character and visual amenity. Where the effect has been classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Where likely significant effects are reported, additional mitigation and residual effects are discussed in Sections 8.10 and 8.11. Cumulative impacts are addressed in Chapter 12: Cumulative Effects.

The Scheme design includes embedded landscape and visual mitigation measures and the assessment presented in this chapter reflects the Scheme design with embedded mitigation incorporated. Section 8.10 identifies any additional mitigation that could further reduce effects but which is not currently embedded in the Scheme design. Landscape and visual mitigation embedded in the Scheme design is:

- Cladding to the flood defence wall in locally characteristic slate in a material and bond pattern compatible with the appearance of Cardigan Castle and Bridge, providing a coherent cladding pattern whilst being in keeping with local character and context.
- Use of engineered concrete coping to reduce the flood defence wall height compared to use of natural stone coping. Natural stone coping would have needed to be laid above flood defence level; whereas the engineered coping can form part of the flood defence.
- Use of dark grey colour (RAL 7043) for the DCWW flood gate and railings surrounding the outfall asset on the wet-side of the defence, to recess it into the landscape.
- Seeding of the upper riverbank slope and crest with a locally characteristic estuarine seed mix to reduce the visual impact of the flood defence when viewed from the riverward side, by breaking up the vertical mass of the defence and providing a softening effect.
- Public realm enhancements along Strand incorporating slate paving to tie in with paving used at adjacent Prince Charles Quay and Cardigan Castle entrance; street trees; and planting beds. These measures would be positive changes providing compensation, and the taller planting would break up the mass of the flood defence wall as viewed from Strand, reducing its visual impact.
- Setting the flood defence wall back from the road at Strand to reduce the loss of wide views.
- Removal of incongruous utilitarian railings around an existing riverside plateau would be a positive change, providing compensation.

(a) Effects on Site Fabric

During operation, the northern riverbank would be formed of the flood defence, see drawing 4021883-BUK-ZZ-00-DR-C-05000 Embankment Standard Cross Section. This consists of an approximately 3m high engineered riverbank to which rock rolls are attached to the lower 2.4m, with a vegetated upper 0.6m. The upper vegetated slope would be seeded with an estuarine and salt tolerant seed mix. The lower 2.4m would not be vegetated as part of the Scheme, although sediment from the river is expected to be washed into the rock crevices over time,

and is expected to form a habitat of seaweeds and lichen on littoral mud, similar to that found on both banks downstream of Cardigan Bridge. A flood defence wall would be visible on top of the engineered riverbank, and would be clad in locally characteristic slate compatible with the appearance of Cardigan Castle and Bridge. This differs from the existing riverbank, with its incoherent mix of various height walls, mud and shingle, grass banks and ledges, boat access ramps and vegetation from adjacent gardens. A flood gate would be installed in the wall to permit operational access to the DCWW outfall structure near the bathroom centre, with railings installed to the outfall on the wet side of the defence.

Along Strand between Cardigan Bridge and the bathroom centre, public realm enhancements would provide a positive change to a currently unmaintained lower plateau area consisting of paving and self-set buddleia enclosed on the southern side by municipal railings. The highway pavement alongside this is black tarmac. As part of the Scheme the pavement would be widened, and the resulting area paved in slate for consistency with surrounding material use at Prince Charles Quay and Cardigan Castle. Street trees would be planted along the roadside and planted beds would separate pedestrians from the busy road. The estuarine and salt tolerant seed mix used on the upper riverbank slope would also be used on the remaining section of plateau on the riverward side of the defence, for consistency.

At Gloster Row car park there would be a loss of car park space as the flood defence wall is realigned away from the river, allowing more space for estuarine habitats on the riverward side. There would be a loss of a small area of green space to the east of the current car park; this along with separation from the river would give a more urbanised feel to the car park.

(b) Effects on Landscape Character

The detailed assessment of effects for each landscape character area is set out in Appendix 8.2. The summary of sensitivity, magnitude and significance presented in Tables 8-10 and 8-11 are derived from those detailed judgements.

Table 8-10 Construction effects on Landscape Character Areas

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
LCA1 Cardigan urban area	Medium	Slight	Moderate-Minor (not significant)	Negative
LCA2 River and intertidal habitat	High	Moderate	Major-Moderate (significant)	Negative
LCA4 Southern enclosed slopes	Medium	Negligible	Minor-Negligible (not significant)	Negative

Table 8-11 Operational effects on Landscape Character Areas

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
LCA1 Cardigan urban area	Medium	Slight	Moderate-Minor (not significant)	Negative
LCA2 River and intertidal habitat	High	Moderate	Major-Moderate (significant)	Negative
LCA4 Southern enclosed slopes	Medium	Negligible	Minor-Negligible (not significant)	Negative

For two of the three assessed character areas, LCA1 Cardigan urban area and LCA4 Southern enclosed slopes, both the construction and operational effects are judged to be not significant. For LCA1 Cardigan urban area, this is largely due to the surrounding context of built form, the contained nature of the area, and, during operation, the use of a cladding appropriate to the local environment. For LCA4 Southern enclosed slopes, the distance from the Scheme means that effects are indirect only. As the likely effect on these two character areas is judged to be not significant, they are not discussed further within this chapter. The impact on receptors which are expected to experience likely significant effects are further described below.

Effects on the character of SLA7: Teifi Valley have also been assessed. During construction, SLA7 would experience disturbance to tranquillity and peacefulness from construction machinery, and large scale plant breaking up the open nature of the river around the location of the Scheme. The key characteristics relating to incised wooded tributaries, or settlement pattern would not be altered. The scale of change is considered to be small as there would be little change to features or characteristics forming the purpose of the designation. Cors Caron raised mire at the SLA's east end is far removed from the Scheme, and impacts would be limited in extent. Combined with a short term duration of these construction effects, the resultant magnitude of effect during construction would be Negligible, and the resultant significance Minor, i.e. not significant.

During operation, SLA7 would experience change to its northern boundary as it passes through Cardigan, due to the introduction of the flood defence. This would form a higher boundary than at present, and the defence footprint would encroach into the river compared to the present situation. However, the SLA description acknowledges that the settlement of Cardigan already applies squeeze upon the river, and consequently the character of the river corridor through Cardigan already departs from the character of the river corridor elsewhere in the SLA. Cardigan is viewed as a 'change point' within the SLA description, with the character of the SLA varying considerably upstream compared to downstream of Cardigan. It is therefore considered that during operation the Scheme would have a Negligible scale of effect on SLA7. As with construction effects, this would be experienced over only a limited extent of the SLA, resulting in a Negligible magnitude of effect. The resultant significance Minor, i.e. not significant.

Likely significant effects during construction

One character area, LCA2 River and intertidal habitat, has been identified as having a likely significant effect during both construction and operation. During construction, a large scale of change is expected from disturbance to tranquillity from construction plant, disruption to the flat, open nature of the river through construction activities, and from incongruous construction materials until the final finishes to structures are installed. The temporary haul road would extend into the river, limiting the presence of the intertidal mudflats which are a key feature of the area. These changes would affect an intermediate extent of the character area.

The duration of effect would be short term, and the resulting magnitude moderate. As described in the Baseline section 8.8, the sensitivity of this receptor is judged to be high, which when combined with a moderate magnitude of change results in a significance of major-moderate during construction, i.e. a significant effect. The effect would be negative.

Likely significant effects during operation

During operation, LCA2 would experience a medium scale of change from the widened flood defence footprint and associated loss of mudflats which are a key characteristic of this character

area and from the new feature of the rock rolls, particularly of the mesh enclosing the installed rock rolls which would appear out of place. It is noted however that the change to a consistent defence design as part of the Scheme would provide a positive change when compared to the existing incoherent mix of defence styles and materials; as would limiting intervisibility with existing modern inconsistent built form on the north bank of the river, particularly corrugated metal warehouse-style buildings, through screening provided by the flood defence. In contrast to the construction period, these changes during operation would only affect a localised extent of the character area, as the footprint of the permanent works is smaller than that of the construction working area, and the Scheme during operation would be passive and not affect tranquillity of the wider character area. The effect would however be permanent; although the appearance of the rock rolls would soften over time it is not considered that this would reduce the magnitude of the change.

As a result there would be a medium scale of change over a localised extent of LCA2. The duration of effect would be permanent, and the resulting magnitude moderate. The high sensitivity of the receptor, combined with the moderate magnitude of change, results in a significance of major-moderate during operation, i.e. a significant effect. The effect is overall judged to be negative, despite the Scheme resulting in some positive and some negative impacts on this character area during operation.

(c) Effects on Visual Amenity

The detailed assessment of effects for each visual receptor group is set out in Appendix 8.2. The summary of sensitivity, magnitude and significance presented in Tables 8-12 and 8-13 are derived from those detailed judgements.

Table 8-12 Construction effects on visual amenity receptors

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
Residents of homes on the north bank of the Afon Teifi	High-Medium	Moderate	Major-Moderate (significant)	Negative
Indoor users of buildings on the north bank of the Afon Teifi	Low	Moderate	Moderate-Minor (not significant)	Negative
Users of recreational open spaces on the north bank of the Afon Teifi	Medium	Slight	Moderate-Minor (not significant)	Negative
Pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay	High	Moderate	Major-Moderate (significant)	Negative
Visitors to Cardigan Castle and Gardens	High	Negligible	Minor (not significant)	Negative
Residents of homes on the south bank of the Afon Teifi	High-Medium	Slight	Moderate-Minor (not significant)	Negative

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
Workers at industrial premises on the south bank of the Afon Teifi	Medium-Low	Moderate	Moderate-Minor (not significant)	Negative
Pedestrians and cyclists on riverside routes	High-Medium	Moderate	Moderate (not significant)	Negative
Road users	High-Medium	Moderate	Moderate (not significant)	Negative
Individuals and groups using the river	High-Medium	Moderate	Major-Moderate (significant)	Negative
Users of the Wales Coast Path	High	Slight	Moderate (not significant)	Negative
Users of Ceredigion Coast Path and other PRow	High-Medium	Negligible	Minor-Negligible (not significant)	Negative
Residents in properties close to or overlooking the northern compound (receptor for construction effects only)	High-Medium	Slight	Moderate-Minor (not significant)	Negative

Table 8-13 Operational effects on visual amenity receptors

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
Residents of homes on the north bank of the Afon Teifi	High-Medium	Slight	Moderate (not significant)	Negative
Indoor users of buildings on the north bank of the Afon Teifi	Low	Moderate	Moderate-Minor (not significant)	Negative
Users of recreational open spaces on the north bank of the Afon Teifi	Medium	Substantial	Major-Moderate (significant)	Negative
Pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay	High	Moderate	Major-Moderate (significant)	Neutral
Visitors to Cardigan Castle and Gardens	High	Negligible	Minor (not significant)	Positive
Residents of homes on the south bank of the Afon Teifi	High-Medium	Slight	Moderate-Minor (not significant)	Neutral
Workers at industrial premises on the south bank of the Afon Teifi	Medium-Low	Moderate	Moderate-Minor (not significant)	Neutral

Receptor	Sensitivity	Magnitude	Significance	Positive/negative
Pedestrians and cyclists on riverside routes	High-Medium	Moderate	Moderate (not significant)	Neutral
Road users	High-Medium	Moderate	Moderate (not significant)	Negative
Individuals and groups using the river	High-Medium	Moderate	Moderate (not significant)	Negative
Users of the Wales Coast Path	High	Slight	Moderate (not significant)	Neutral
Users of Ceredigion Coast Path and other PRow	High-Medium	Negligible	Minor-Negligible (not significant)	Negative

For eight of the assessed visual amenity receptors, both the construction and operational effects are judged to be not significant. This is largely due to the urban context within which the Scheme is located, existing built form screening views and reducing the extent of receptors affected, the distance of some receptors from the Scheme, and the positive influence of the embedded mitigation. These receptors are not discussed further in this chapter; further detail can be found in Appendix 8.2. The impact on receptors which are expected to experience likely significant effects are further described below.

Pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay are likely to experience significant effects during both the construction and the operation of the Scheme. Residents of homes on Church Street and Strand on the north bank of the Afon Teifi and individuals and groups using the river are expected to experience significant effects during construction, and users of recreational open spaces (old foundry site and open space at Gloster Row car park) on the north bank of the Afon Teifi are likely to experience significant effects during operation.

Likely significant effects during construction

During construction, residents of homes on the north bank of the Afon Teifi would experience close views of construction machinery, haul road, unclad sheet pile flood defence before the final finish is applied, and oblique views of the southern compound across the river. The scale of change would be medium, and the extent localised to properties at the east end of the Scheme close to Gloster Row car park. Combined with the short-term nature of the change this results in a moderate magnitude of change. When this is combined with the high-medium sensitivity of the receptor the result is a major-moderate significance of effect during construction, i.e. a significant effect. The effect would be negative.

During construction, pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay would experience immediate views of construction machinery, site fencing and partial views of the temporary haul road, but the field of view occupied by construction works would be limited. There would also be views of the unclad sheet pile flood defence before the final finish is applied. The pedestrian footway along the south side of Strand would be temporarily closed to the public for the duration of the works, however the footway along the northern side would remain open; receptors on Strand would therefore remain present during the construction period. The scale of change would be medium and the extent intermediate. Combined with the short-term duration, there would be a moderate magnitude of change. The

sensitivity of the receptor is high, resulting in a significance of major-moderate, i.e. significant. The effect would be negative.

For individuals and groups using the river, during construction the scale of change would be large due to their very close proximity to the works. Access along the river would continue during construction; exclusion zones would be established to ensure the safety of users, but the river would remain navigable. The flood defence would be constructed from the riverward side, on a temporary haul road, in the immediate vicinity of river users. They would have views of the unclad sheet pile flood defence before the final finish is applied. The change would be experienced over an intermediate extent, and be short-term in duration, resulting in a moderate magnitude of change. Combining this with the high-medium sensitivity of the receptor results in a major-moderate, i.e. significant effect. The effect would be negative.

Likely significant effects during operation

The changes experienced by the same pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay during operation would vary along their route. From Cardigan footbridge pedestrians would see the new flood defence wall atop the constructed riverbank along the north bank of the Afon Teifi, partially blocking views of the lower parts of modern commercial and warehouse-style buildings and traffic on the north bank that are currently a detractive feature in views. Views of Cardigan Castle and Cardigan Bridge Scheduled Monuments however, which lead to the higher value attached to these views, would not be blocked by the Scheme, and would remain within the views of these receptors. The flood defence wall would be clad with locally characteristic slate in a material and bond pattern compatible with the appearance of Cardigan Castle and Bridge, tying the flood defence in with its surrounding context, which would be a positive change to the current views of mis-matched materials along the northern riverbank. The artificial appearance of the rock rolls is likely to appear out of place, although the varied form of the defence would break up what could otherwise be an imposing wall, and the vegetated upper slope would provide a softening effect. The flood gate allowing access to the DCWW outfall asset would be visible within the flood defence, as would the flood gate and up and over canoe/kayak access ramp at the Old Foundry site, although the access ramp would not be a new type of feature in a view which contains existing boat slipways. The change would be more apparent at low tide, when the rock roll surfaced riverbank would be most visible. At high tide the change experienced would be of the vegetated upper slope and flood wall, but the rock rolls would not be visible.

Pedestrians on Strand between the bathroom centre and Cardigan Bridge would have their views of the river limited by the flood defence wall, which would vary between 2m to 1.1m high above pavement level; the river would be blocked from view at the eastern end by the bathroom centre but still visible over the lower wall nearer Cardigan Bridge. The river is constrained by walls as it passes through Cardigan and is not of natural physical form. Views along Strand would be improved through public realm enhancements which would introduce new slate surfacing tying the area into its surrounding context as well as planting, trees and seating. This would replace a currently disused space comprising unmaintained paving and self-set buddleiha which detracts from views. Pedestrians using this route would therefore experience changes to their views which are positive (public realm enhancements and removal of the current detractive open space) and negative (limited views of the river). From Prince Charles Quay there would be limited change to views as only the westernmost part of the flood defence wall would be visible, occupying a very small part of the view.

The scale of change for this receptor group would be medium, but the change would be more noticeable on Strand close to the Bathroom Centre and bus stop, and only slight at Prince Charles Quay. The moderate scale of change would be experienced over a localised extent. Combined with the permanent duration of the change this would result in a moderate magnitude of change. As sensitivity of the receptor is high, this results in a major-moderate, i.e. significant effect. The effect from the loss of the river views would be negative, while the effect from the public realm enhancements and material selection which ties the Scheme together in a coherent way would be positive. The overall effect is judged to be neutral (a combination of both negative and positive effects in equal measure). The change is significant due to the scale and permanence of alteration to the view, but the effect is also judged to be neutral because beneficial and adverse components of the change are balanced.

Users of the recreational open spaces on the north bank of the Afon Teifi comprise individuals and groups using the old foundry site by the boat house and scout hut, Gloster Row car park and its adjacent grassed open space. During operation these receptors would experience a large scale change to their views from the introduction of the flood defence wall and slight changes to surrounding open space. The defence would stand approximately 2m high relative to the ground level at the old foundry site, completely blocking views of the river. Changes to views at Gloster Row car park would consist of the new flood defence wall between 1.0-1.6m high restricting views of the river, and partial loss of the grassed open space and car park. Long range views along the river corridor from Gloster Row car park would be disrupted by the height of the flood defence wall. Although the impact of the flood defence wall would be reduced through sensitive cladding, these users will still experience a large scale change to their views due to the height of the flood defence and the proximity of the receptor to the Scheme, but the extent would be localised. Due to the permanent duration of the change the magnitude of change would be substantial. Combining this with the medium sensitivity of the receptor results in a major-moderate, i.e. significant effect. The effect would be negative.

8.10 Mitigation measures

Embedded mitigation as listed in section 8.9 has reduced the impacts of the Scheme on landscape and visual amenity receptors, notably the cladding of the flood defence wall in a material and pattern similar to that of Cardigan Castle, use of an engineered concrete wall coping to reduce the wall height compared to use of natural stone coping, seeding of the upper riverbank and the public realm enhancements along Strand. However, significant effects during construction and operation are still expected to arise from the following:

- The presence of moving machinery, unclad sheet pile flood defence before final finishes are applied, noise and reduction in tranquillity during construction.
- The incursion of the engineered riverbank into the river and loss of characteristic mudflats during operation.
- The proposed flood defence wall blocking views of the river from the north bank during operation.
- The imposing height of the proposed flood defence for users of the river during operation.

The above effects cannot be wholly avoided because the engineered riverbank and flood wall are required to provide the necessary standard of flood protection and structural stability. The engineered riverbank is required to structurally stabilise the flood defence wall, and the flood

defence must be built to a height sufficient to reduce flood risk. Construction impacts cannot be prevented, though would only be short term.

No substantive additional mitigation measures have been identified, although the planning approvals process should ensure that the cladding material and pattern of the flood defence wall remains similar in appearance to Cardigan Castle. A sample panel using the proposed slate, bond, mortar, coping and associated detailing shall be made available on site for inspection once a contractor for the construction of the Scheme is appointed, and approved prior to installation.

8.11 Significance and duration of residual effects

Since no substantive additional mitigation is proposed the effects as described above do not change.

8.12 Difficulties and uncertainties

The following difficulties and uncertainties have been identified in relation to the assessment of landscape and visual amenity effects:

- The assessment of likely significant effects within this chapter relies upon the use of professional judgement. Within EIA, the use of professional judgement is always required. However, this is substantiated wherever possible with evidence which informs the opinion of the competent expert.
- The landscape architects visited publicly accessible locations only during the site visit, therefore photographic records are taken from publicly accessible locations only. Professional judgement has been applied to assess receptors located on private land.
- At the time of the site visit, locations of compounds and haul roads were not known. For the visual amenity receptor group: Residents in properties close to or overlooking the northern compound (a receptor for construction effects only), there is therefore no viewpoint photograph taken to illustrate their view. This does not affect the outcome of the assessment or concluding judgements.

8.13 Summary of assessment

Significant effects are considered likely for a limited number of landscape and visual amenity receptors during both the construction and operation phases of the Scheme. Significant effects are considered likely to one landscape character area receptor, LCA2 River and intertidal habitat, during construction and operation. Significant effects are considered likely to three visual amenity receptor groups during construction, and two during operation. Those visual amenity receptor groups likely to experience significant effects are residents of homes on the north bank of the Afon Teifi, users of recreational open spaces on the north bank of the Afon Teifi, pedestrians on Strand, Cardigan footbridge, Bridge Street and Prince Charles Quay, and individuals and groups using the river. All these receptor groups are in immediate or close proximity to the Scheme.

All except one significant effect are considered to be negative. The exception is the effect on visual amenity of pedestrians along Strand during operation of the Scheme, who would experience both the positive impact of the public realm enhancements along Strand, removal and limiting of existing detractive views of unmaintained areas and incoherent urban fringe

development, and the coherent material use of the flood defence wall cladding tying the defence into its setting, as well as the negative impact of the loss of some river views. The effect on this receptor is therefore considered to be neutral, i.e. a combination of both positive and negative impacts in equal measure.

Significant residual effects would remain due to the height of the flood defence wall, footprint of the constructed riverbank and, during construction, views of machinery and plant. It is not considered that there is any further mitigation that could be incorporated into the Scheme design to reduce the effect on any of the above receptors to not significant.

8.14 References

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