

9 LANDSCAPE

9.1 INTRODUCTION

This section of the Environmental Impact Statement addresses the landscape and visual aspects of the proposed flood relief scheme for Bandon, Co. Cork. The Study Area, which in the case of this chapter is defined as the channel, floodplain and surroundings of the Bandon River from Baxters Bridge upstream of the proposed works as far as Curranure, downstream of O'Driscoll's Bridge, where works will terminate, is described with reference to Landscape Character and Landscape Type, and the ratings that have been assigned to it in terms of Value, Sensitivity and Importance. The relevant landscape policy recommendations that have been set out for this area by Cork County Council in terms of landscape and visual characteristics are also addressed.

The visual impact assessment of the proposed development also encompasses the use of photomontages.

The only available, quasi-official document providing guidance on landscape at a national level is '*Outstanding Landscapes*', published by An Foras Forbartha in 1976. In 2000, the then Department of the Environment and Local Government built on this document by producing '*Landscape and Landscape Assessment: Consultation Draft of Guidelines for Planning Authorities*', which recommended that all Local Authorities adopt a standardised approach to landscape assessment for incorporation into Development Plans and consideration as part of the planning process. This chapter of the EIS has been broadly based on these guidelines.

9.1.1 METHODOLOGY

This section of the EIS is based on a combination of desk and field studies. The desk study reviews previous landscape character assessments and reviews that have been carried out within the Study Area. It incorporates a description of the policies and objectives of Cork County Council with regards to Landscape Character Assessment, Scenic Amenity, Views and Prospects, and Scenic Routes and Landscapes, with specific reference to the Study Area location. The primary sources of information consulted during the course of the desk study include:

- Cork County Development Plan 2009
- Bandon Electoral Area Interim Local Area Plan 2011
- Draft Landscape Strategy for County Cork 2007
- Environmental Protection Agency CORINE Land Cover Map

The field survey was conducted on the 16th of May 2012 and consisted of an initial windshield survey to gain familiarity with the Study Area and ascertain the limits of the visual unit and a walkover survey of the Study Area to assess the landscape character of the Study Area. Photographs illustrating the landscape attributes of the Study Area were taken and notes were taken on landscape features in the Study Area.

9.2 RECEIVING ENVIRONMENT

9.2.1 Landscape Character Assessment

Chapter 7 of the Cork County Development Plan 2009 sets out the policies and objectives of Cork County Council with regards to Heritage and Environment. Section 7.2 refers to the Landscape Character Assessment of County Cork, which was carried out during preparation of the 2003 County Development Plan. This Assessment identified 76 Landscape Character Areas (LCAs) within the county, which were

then amalgamated into a set of 16 generic Landscape Types based on similar physical and visual characteristics.

Since 2003, the Landscape Character Assessment process for County Cork has continued. The assessment entails the use of a GIS-based multi-criteria evaluation and is presented in the form of a Draft Landscape Strategy for County Cork. The Draft Strategy is presented as a detailed supporting document to the 2009 County Development Plan. It is stated in the 2009 Plan that Cork County Council intends to finalise the Draft Strategy to include policy recommendations for the County Development Plan before proceeding with a Variation to the Plan to give effect to the Strategy.

9.2.1.1 Landscape Character and Type

The Study Area for this Study is located within the Landscape Character Area: Enniskeane/ Bandon/ Ballinhassig (LCA No. 58). The Enniskeane/ Bandon/ Ballinhassig LCA forms part of the general Landscape Type: Broad Fertile Lowland Valley (Type 6a). The Broad Fertile Lowland Valley Landscape Type extends east and west from Bandon and is found also in the eastern parts of the county. The settlements of Ballincollig and Blarney are also located within this Landscape Type. The Draft Landscape Strategy describes Broad Fertile Lowland Valley as follows:

"This landscape type stretches west and east from the environs of Cork City but also includes a smaller area east of Rathcormac. The valleys in these areas are created by the rivers flowing east to west and are surrounded by low well spaced ridges. These shallow and flat valleys wind as they follow the course of the river, rising to the north and south with gentle slopes where the valley is wide but with steeper faced slopes where the valley narrows. Further upstream to the west the broad flatness narrows and winds between low hills. Land cover comprises highly fertile, regularly shaped fields typically of medium size and with mature broadleaf hedgerows. Agricultural use primarily involves intensive dairying as well as tillage, with farmsteads relatively well screened by the hedgerows. Some of the larger settlements include Bandon, Ballincollig and Blarney to the west of Cork City, Castlemartyr to the east and Rathcormack to the north. Major roads such as the N22 between Macroom and Cork City and the N71 between Inishannon and Bandon tend to follow the rivers, often providing distant views across the landscape."

The Draft Landscape Strategy also lists the key characteristics of the Broad Fertile Lowland Valley Landscape Type, including the following:

- Land cover comprises a mosaic of regularly shaped fields typically of medium size. The fields throughout this landscape are bounded mostly by mature broadleaf hedgerows but also by post and wire fencing. Lower hedgerows prevail further to the west on higher ground.
- The agricultural use of this landscape primarily involves intensive dairying as well as tillage. The latter provides seasonal colour variation.
- There are large field sizes to the east of this Landscape Character Type.
- In the southwest, agriculture is interspersed with areas of marginal land and established broadleaf forestry.
- Farmsteads within this Landscape Type comprise houses as well as metal sheds (with older barrel vaulted or modern A-frame roofs) and traditional out buildings, most of which are relatively well screened by the hedgerows.
- Scrub and areas of gorse are relatively rare but groups of broadleaf trees and shelterbelts are common, providing punctuation across the landscape or hinting at the presence of farmsteads.

- Heathland on hilltops is more evident further west. Field sizes are also noticeably smaller in the western part of this Landscape Character Type.
- The valleys in these areas are created by the rivers flowing east to west, for example the Lee and Bandon Rivers, and are surrounded by low well-spaced ridges. They have also created imposing views across the landscape.
- In general, the towns in the area have a strong character/urban fabric reflecting the historic agricultural wealth of the area.
- Major roads such as the N22 between Macroom and Cork City and the N71 between Inishannon and Bandon tend to follow the rivers, often providing distant views across the landscape.
- There is some quarry activity in the area.

9.2.1.2 Study Area Land Cover

The CORINE land cover data for the Study Area was obtained from the Environmental Protection Agency (EPA). CORINE land cover is a map of the environmental landscape based on the interpretation of satellite images. It provides comparable digital maps of land cover for each country for much of Europe.

The CORINE data for the Study Area shows that pasture is the primary land cover within the Study Area. Pastoral land within and in the vicinity of the Study Area is interspersed with smaller areas of non-irrigated arable land. Continuous urban fabric occurs at the settlements of Bandon, Inishannon and Shippool. The outskirts of Bandon are characterised in most directions by discontinuous urban fabric, which gives way to pastoral and arable farmland. To the west of Bandon, an area of mixed forest is present. Intertidal flats are found in the eastern-most section of the Study Area adjacent to the Bandon River.

9.2.1.3 Landscape Value and Sensitivity

The Draft Landscape Strategy for County Cork classifies the Landscape Value of each Landscape Type within the county, using a scale ranging from Very Low to Very High. The Landscape Value of each area was derived from an assessment of the natural, scenic and cultural value as determined within that area. The Landscape Type Broad Fertile Lowland Valley, in which the Study Area is located, has been assigned an overall Landscape Value of High.

Landscape Sensitivity values were also defined through an assessment of the landscape character sensitivity and visual sensitivity of each area. The Landscape Character Types are ranked into five Landscape Sensitivity categories, ranging from Low to Very High. The Landscape Type Broad Fertile Lowland Valley, in which the majority of the Study Area is located, has been assigned an overall Landscape Sensitivity of High. This type of landscape is of high quality, vulnerable to change and can accommodate limited development pressure.

The Landscape Type Indented Estuarine Coast occurs to the eastern-most section of the Study Area. The Landscape Value and Sensitivity of this Landscape Type have been classified as Very High.

9.2.1.4 Scenic Amenities, Views and Prospects

Section 7.2 of the Cork County Development Plan 2009 refers to the features within the landscape that are recognised for their visual aspects and quality, and which play a significant role in maintaining the County's vitality as a visitor attraction and as an attractive place to live and work. It is a general objective of Cork County Council therefore to protect the visual and scenic amenities of the county's built and natural environment, as stated in Objective ENV 2-6 of the Plan. Objective ENV 2-9 relates to general views and prospects and states:

"It is a general objective to preserve the character of all important views and prospects, particularly sea views, river or lake views, views of unspoilt mountains, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty as recognised in the Landscape Strategy."

9.2.1.5 Scenic Routes and Landscapes

The Cork County Development Plan identifies specific Scenic Routes and Scenic Landscapes, which in general make up the areas of natural beauty and important views and prospects most valued by residents and visitors to Cork. Scenic Routes act as indicators of high value landscapes and identify more visually sensitive locations where higher standards of design, siting and landscaping are required. The objectives of the Planning Authority with regards to the Scenic Routes and Landscapes are as follows:

- *Objective ENV 2-7 Scenic Landscape: It is a particular objective to preserve the visual and scenic amenities of those areas of natural beauty identified as scenic landscape and shown in the scenic amenity maps in Volume 3 of this plan.*
- *Objective ENV 2-11 Scenic Routes: It is a particular objective to preserve the character of those views and prospects obtainable from scenic routes identified in this plan. These routes are shown on the scenic amenity maps in Volume 3 and listed in Volume 2 of this plan. A profile of each route and the views to be protected are listed in Volume 2 of this plan.*
- *Objective ENV 2-12 Details of Scenic Routes: It is an objective to protect the character and quality of those particular stretches of scenic routes that have very special views and prospects.*
- *Objective ENV 2-13: Development on Scenic Routes:*
 - (a) *It is also an objective of the Planning Authority to require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, the appropriateness of the design, site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area.*
 - (b) *It is an objective to encourage appropriate landscaping and screen planting of developments along scenic routes. Where scenic routes run through settlements street trees and ornamental landscaping may also be required. Refer to Objective ENV 4-13, which provides guidance in relation to landscaping.*

A total of 118 Scenic Routes are identified within the county, as listed in Volume 2 – Chapter 4 of the County Development Plan. Three of these Scenic Routes are partially located within the Study Area, including:

- Route S63: R605 Regional Road and Local Road between Inishannon and Kinsale via Shippool. Views of woodland and the Bandon River Valley.
- Route S64: N71 National Secondary Road between Bandon and Inishannon. Views of the Bandon River and woodland.
- Route S65: Local Roads from Inishannon to Ballinadee to Barrel Cross Roads to Kilnacloona. Views of open countryside, hills, woodland and the Bandon River.

The locations of these routes are shown in Figure 9.1.

A profile of each Scenic Route identified in the County Development Plan is set out in Appendix B of Volume 2 of the Plan. The profiles of Scenic Routes S63, S64 and S65, as listed in Appendix B, are shown overleaf in Table 9.1.

The Landscape Maps in Volume 3 of the County Development Plan show the designated Scenic Routes and Landscapes within each Landscape Type. The Study Area is shown in Maps 14 and 15 of Volume 3. These maps show the areas to the west, north and east of Bandon that have been designated as Scenic Landscapes. The locations of these areas are also shown in Figure 9.1 of this report. It should be noted that the Scenic Landscapes identified in the 2009 Plan are currently being reviewed with regards to issues raised by rural communities, and it is considered by the County Council that further consultation with the public is necessary before finalising the County's Scenic Landscapes.

Scenic Route	Runs Through or Adjoins a Scenic Landscape	Adjoining NHA, pNHA, SAC, SPA or pSPA	Landscape Type(s) Route Runs Through	Overall Landscape Value	Main Features of Land cover	Key Characteristics of Land Use	Sense of Remoteness	Rural Character
S63	Yes	pNHA Bandon Valley below Inishannon	Type 7b Rolling Patchwork Farmland, Type 6a Broad Fertile Lowland Valleys, Type 3 Indented Estuarine Coast	Medium – High – Very High	Valley & trees	Agriculture, tourism, some industry	No	Not Prevalent
S64	Yes	pNHA Bandon Valley below Inishannon	Type 6a Broad Fertile Lowland Valleys	High	Trees, woodland & Bandon River	Agriculture, tourism	No	Not Prevalent
S65	Yes	pNHA Bandon Valley below Inishannon	Type 3 Indented Estuarine Coast, Type 7a Rolling Patchwork Farmland, Type 6a Broad Fertile Lowland Valleys	Very High – Medium - High	Trees and the Bandon & Ballinadee Rivers	Agriculture, tourism, gravel works	No	Not Prevalent

Table 9.1 Scenic Route Profiles

9.2.2 Bandon Electoral Area Local Area Plan (LAP) 2011

The Study Area is located within the Bandon Electoral Area. The Bandon Electoral Area Local Area Plan (LAP) 2011 was published in August 2011. Section 3 of the Interim LAP sets out the planning proposals for the settlements within electoral area, including a description of the issues faced by individual settlements. The proposals for the main settlement area of Bandon are set out in Section 3.1 of the Interim LAP. Within this section, under the heading of Environment and Heritage, the LAP makes the following points with regards to Landscape and Visual properties:

- To the west of the town, the steeply sloping river valley sides make an important contribution to the setting of the town and are, in part, designated as Scenic Landscape.
- The N71 to the east of the town is designated as part of a Scenic Route (S64).
- The Landscape Character Type (LCT) for the area around Bandon is Broad Fertile Lowland Valleys. The landscape value and sensitivity in this area are both deemed to be high. The landscape importance is at a county level.
- The valleys in these areas are created by rivers flowing east to west, for example the Bandon River, and are surrounded by low well-spaced ridges. They have also created imposing views across the landscape.

9.2.3 Landscape Policy Recommendations

It is an objective of Cork County Council to ensure that landscape issues will be an important factor in all land-use proposals, thereby ensuring that a pro-active view of development is undertaken while maintaining respect for the environment and heritage generally in line with the principle of sustainability. (Cork County Development Plan 2009: Objective ENV 2-2 The Landscape). In this regard, the Draft Landscape Strategy for County Cork 2007 sets out specific recommendations for each Landscape Type within the county. The relevant recommendations for the Broad Fertile Lowland Valley Landscape Type, in which the majority of the Study Area is located and to which regard should be had in designing the proposed scheme, include:

- Protect and preserve the Bandon River and its surrounding floodplains as unique landscape features in this Landscape Character Type and as valuable resource for scenic and amenity values.
- Conserve and enhance the characteristics in this Landscape Character Type that are important to tourism.
- Have regard to the rich and diverse natural heritage in this Landscape Character Type and the concentration of pNHAs that are designated for protection. While protecting these areas it is also important to recognise their potential as key recreation and amenity sources.
- Protect the existing character and setting of villages and village nuclei which are under pressure from population growth particularly those villages which are located close to Cork City.
- Recognise that the lowlands are made up of a variety of working landscapes that are critical resources for sustaining the economic and social well being of the county.

The recommendations for the Landscape Type Indented Estuarine Coast relate primarily to the coastline, for example the protection of sand dunes, the protection sea views from coast roads, etc., and are therefore not relevant to the Study Area. The recommendations that are of relevance for the eastern-most section of the Study Area include:

- Minimise disturbance of hedgerows in rural areas.
- Encourage appropriate landscaping and screen planting of proposed developments by using predominately indigenous/local species and groupings.
- Protect the existing character and setting of villages and village nuclei, which are under pressure from population growth.
- Continue to promote agriculture as a major land use in this LCT. This will help maintain the existing features of the landscape while also supporting the local economy and rural diversification.

9.2.4 Landscape Character

Landscape character refers to the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how people perceive this. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement, and creates the particular sense of place found in different areas. The identification of landscape character comprises the identification of the physical, visual and image units.

9.2.4.1 Physical Unit

The topography, vegetation and anthropological features on the land surface in an area combine to set limits on the amount of the landscape that can be seen at any one time. These physical restrictions form individual areas or units, known as physical units, whose character can be defined by aspect, slope, scale and size. A physical unit is generally delineated by topographical boundaries and is defined by landform and landcover.

The physical landscape unit in which the Study Area is located is shown on Figure 9.2. This landscape unit comprises the lower Bandon River Valley area and also encompasses the settlements of Dunmanway, Bandon, Balincollig, Blarney and Carrigaline and reflects the Broad Fertile Lowland Valley Landscape Type described in the Draft Landscape Strategy for County Cork (2007). Landcover within this physical unit comprises mainly of 'highly fertile, regularly shaped fields typically of medium size with mature broadleaf hedgerows'. Many major roads within this physical unit including the N22 between Macroom and Cork City and the N71 between Inishannon and Bandon, generally follow the course of rivers.

The topography of this physical landscape unit is evenly undulating with shallow, flat river valleys surrounded by low well-spaced ridges. The highest peaks are in the region of 200 metres O.D.

9.2.4.2 Landform

Present-day landscapes owe their form to the geological materials from which they were carved. Landform is the term used to describe the spatial and formal arrangement of landscape components as a natural product of geological and geomorphologic processes in the past, and refers primarily to topography and drainage.

9.2.4.2.1 Geological Processes

According to *The Geology of South Cork* (Sleeman and Pracht, GSI, 1994), the majority of the Study Area is underlain by the carboniferous Kinsale formation, which is a grey mudstone with subordinate sandstone. This formation is defined overall as a mud-dominant succession. In the most northerly part of the Study Area in the vicinity of the Brinny River, there is a small band of Old Head sandstone formation.

The Old Head sandstone formation comprises a thick succession of grey sandstones and heterolithic bedded sandstones and mudstones.

The Geological Survey of Ireland (GSI) indicates that the subsoils in the vicinity of the Study Area are composed chiefly of tills derived chiefly from Sandstones and Shales, with subsoils in the vicinity of the Bandon River consisting generally of Alluvium, with outcrops and subcrops of rock present between Bandon Town and Inishannon. Downstream of Inishannon, marine/ estuarine silts and clays are present. Other subsoils in the Study Area include made-ground in the urban centres of Bandon and Inishannon and glaciofluvial sands and gravels, downstream of Inishannon.

More information on the Soils & Geology of the Study Area is available in Chapter 6 – Soils & Geology of this EIS.

9.2.4.2.2 Topography

In Munster differential erosion has produced a series of parallel ridges of sandstone mountains with fertile limestone valley floors. In Cork and Kerry, glaciation has accenuated this topography. Rivers, such as the Bandon River, are forced to flow along a east-axis in these valleys until they manage to breach the ridges and turn suddenly south to the coast, a characteristic feature of this region. Although the valley walls can be quite steep in places, in general the Bandon valley in the vicinity of the Study Area is best described as a broad fertile valley.

9.2.4.2.3 Drainage

The proposed works site lies within the Bandon catchment.

The Bandon River flows through a valley cut into rocks of the Carboniferous period. The valley floor is covered with glacial drift and alluvium. The river rises in the Maughanaclea Hills in West Cork. It flows eastwards to a point west of Caha Bridge where it turns south, before turning east again to the southeast of Dunmanway. It then flows in a broad fertile valley, with woodlands, to Bandon, and loops in an arc past Inishannon, where it flows southeast and then east, becoming an estuary and reaching the sea in Kinsale Harbour.

In addition, there are two main tributaries that flow into the Bandon River within the Study Area; the Bridewell and Brinny Rivers.

9.2.4.3 Landcover

Landcover is the term used to describe the combinations of vegetation and land-use that cover the land surface. It comprises the more detailed constituent parts of the landscape and encompasses both natural and man-made features.

The EPA web based ENVision database was consulted in relation to land cover. Landcover within the Study Area is dominated by pastoral land with some broadleaf woodland and urban fabric. In the vicinity of the Study Area, land cover consists of pasture, interspersed with non irrigated arable land. The Study Area also includes the towns of Bandon and Inishannon and the valley of the Bandon River. There is therefore a high proportion of discontinuous urban fabric, which is concentrated in the towns of Bandon and Inishannon. The river valley immediately upstream of Inishannon is also host to broad leaf woodland.

9.2.4.4 Visual Unit

A visual landscape unit is defined by spatial enclosure and pattern, i.e. by landform and landcover. The limits of the views that are available from a particular area are therefore determined by the physical

landscape, such as topographical and vegetation boundaries. The visual unit of the immediate area around the Study Area is displayed in Figure 9.3, based on local topography. It should be noted that Bandon's townscape and vegetation is likely to restrict the visual unit to a greater extent than illustrated in Figure 9.3, but that this representation shows the likely maximum visual unit of the study area from peaks around river valley.

9.2.4.5 Image Unit

An image unit is a feature that acts as a major focal point within the landscape. Such features contribute to the creation of a strong identity or sense of place. The landscape of this area, as a whole, is intrinsic to the character of this part of County Cork. However there is no one single feature or image unit that contributes specifically to the identity of the area.

9.2.5 Landscape Sensitivity

The sensitivity of a landscape to development and therefore to change varies according to its character and to the importance that is attached to any combination of landscape values. The sensitivity of a landscape is derived from consideration of designations such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Natural Heritage Areas (NHAs) and National Parks, from information such as tourist maps, guidebooks and brochures, and from the evaluation of indicators such as uniqueness, popularity, distinctiveness, and quality of the elements of the area.

An assessment of landscape sensitivity in the vicinity of the Study Area was carried out during a site visit in May 2012. The methodology for this assessment was based on that set out in the Department of the Environment and Local Government (DoELG) guidance document '*Landscape and Landscape Assessment – Consultation Draft of Guidelines for Planning Authorities*' (2000). This document recommends an assessment of landscape sensitivity based on an evaluation of individual features, such as the quality, integrity, etc. The results of the assessment are presented in Table 9.2 below.

Feature	Description
Quality	The quality of the landscape in this area can be described as modified, with few features not having been affected by major anthropogenic influence.
Integrity	The Study Area has been modified by the interaction of man with the natural environment, primarily in the form of urban development and infrastructure and agricultural and general land management. However the area does retain its landscape integrity in terms of the Bandon river valley, which retains its original course and is the dominant landscape feature locally.
Distinctiveness	Lowland River Valleys are relatively common in the Munster region and as such would be considered common on a regional level but less so on a national level.
Popularity	A sense of popularity is created where landscape features are widely recognised or appreciated. The Study Area is a popular base for angling tourists and in addition is appreciated for its scenic views of the Bandon river valley. Bandon is also considered a gateway to the renowned tourist destination of West Cork and as such experiences a high throughput of visitors.
Rarity	Lowland River Valleys are relatively common in the Munster region and as such would be considered common on a regional level but less so on a national level.
Cultural Meaning	A sense of cultural meaning arises where a site or features within a site are deemed to explain, represent or inspire cultural values. There are numerous ancient monuments such as standing stones, burial grounds and holy wells within the Study Area, which attest to a long settlement history in the area. In addition, various castles such as Castle Bernard to the west of Bandon and the historic town of Bandon itself founded in c.

Feature	Description
	1604 are evidence of a rich historical legacy. See Chapter 10 – Cultural Heritage for more detail.
Sense of Public Ownership & Social Importance	A sense of public ownership arises due to ease of accessibility, visibility or a widely shared meaning. The Study Area encompasses the a substantial stretch of the Bandon River, which is accessible to the public via walkways and public roads. The river is visible from much of the surrounding valley and is an important element of the area's identity.

Table 9.2 Features of Landscape Sensitivity

9.2.6 Landscape and Site Context

This section of the EIS describes the views of the surrounding landscape that are available from the Study Area. It also describes the existing views towards the Study Area from the surrounding area, with particular reference to the views from roads, houses, and areas of amenity value.

9.2.6.1 Views From the Study Area

Views from the Study Area in all directions are restricted by the Bandon River valley walls, woodland and urban infrastructure. All views from the site are restricted to within the Bandon valley itself.



Plate 9.1 View of the Bandon River looking downstream from Bandon Bridge, with urban infrastructure visible on either bank .

Views from Bandon Bridge as shown in Plates 9.1 and 9.2 are dominated by the Bandon River and the urban infrastructure of Bandon Town. This stretch of the Bandon is bounded by river walls and a river walkway is present along one bank of the river – along the north side of the river upstream of Bandon Bridge and along the south bank of the river downstream of Bandon Bridge. Areas of woodland are visible in the background of both the upstream and downstream view from Bandon Bridge. Views from the Study Area in this central part of the Study Area are restricted by topography (valley walls), built infrastructure and vegetation. Bandon Bridge itself is shown in Plate 9.3 from the pedestrian walkway upstream. Plate

9.4 presents a view of the Bandon Weir from the southern bank of the river. Upstream of this weir the banks of the river are bounded by grassland with mature broadleaf trees. Plate 9.5 presents a view of the Bridewell River within Bandon Town looking downstream. The view from the Church of the Immaculate Conception & St. Patrick, which is located on top of the valley wall to the south of the Bandon River is shown in Plate 9.6. While the townscape is visible from this vantage point, the river corridor is barely perceptible from this location.



Plate 9.2 View of the Bandon River from Bandon Bridge looking upstream



Plate 9.3 View of Bandon Bridge itself from upstream side of the river



Plate 9.4 View of Bandon Weir upstream of Bandon Bridge



Plate 9.5 View of the Bridewell River looking downstream in Bandon Town with built development restricting views.



Plate 9.6 View of Bandon Town and Valley from steps of the Church of the Immaculate Conception & St. Patrick.

Plates 9.7, 9.8 and 9.9 present views of the Bandon River upstream of Bandon Town within the uppermost section of the Study Area. Plate 9.7 shows pasture and broadleaf woodland on the southern bank of the Bandon River just upstream of Bandon Town. Plate 9.9 shows a view of the Bandon River from Baxter's Bridge just upstream of the Study Area.

Plates 9.10 and 9.11 show views from the R586 Regional Road linking Bandon Town with Enniskean. Plate 9.10 shows the view looking southwards towards the Bandon Valley just upstream of Bandon Town. The river itself is not visible in the photograph due to a combination of distance and screening vegetation, consisting of trees and broadleaf woodland close to the river. Plate 9.11 shows the extent of screening afforded by trees along this road, which block views of the Bandon valley below.



Plate 9.7 View of the Bandon River upstream of the Weir with pasture and mature broadleaf treeline



Plate 9.8 View of pasture and woodland upstream of Bandon Town



Plate 9.9 View of the Bandon River downstream from Baxter's Bridge



Plate 9.10 View from the R586 north of Bandon looking southwards towards the Bandon Valley.



Plate 9.11 View of trees along the R586 screening the Bandon Valley below

Plates 9.12 and 9.13 show additional views of the Bandon Valley from the northern valley wall in the vicinity of Bandon Town. Both views are representative of the rolling fertile river valley landscape exemplified in the Bandon region.

Plates 9.14 to 9.16 show a selection of views downstream of Bandon Town as far as Curranure. Plate 9.14 presents a view of the river looking upstream from the N71 east of Bandon Town with riparian woodland/trees flanking the river bank on both sides. Plate 9.15 shows the Bandon River looking downstream from O'Driscoll's Bridge, where the proposed works will terminate. An upstream view is presented as one of the photo-montages presented in Section 9.3.6.2 below. The river at this location is bordered by trees and the valley sides are relatively steep. Plate 9.16 shows the view at Curranure, on a meander on the Bandon River. Steep valley sides at this location are covered by broadleaved woodland and bedrock substrate is visible here.



Plate 9.12 View of the eastern outskirts of Bandon Town from the hills above the town to the north of the Bandon River.



Plate 9.13 View of the Bandon Valley from the local road in the townland of Kilbeg to the north of the Bandon River.



Plate 9.14 View of the Bandon River downstream of Bandon Town



Plate 9.15 View of the Bandon River looking downstream from O'Driscoll's Bridge



Plate 9.16 View of meander on Bandon River at Curranure with wooded valley walls.

9.2.6.2 Photomontages

9.2.6.2.1 Definition and Uses

Photomontages are visualisations that superimpose an image of a proposed development upon a photograph or series of photographs. They are intended as graphical representations of how a proposed development will appear in the existing landscape. A series of photomontages has been prepared as part of the EIA, which show the proposed scheme from different locations in the receiving environment. The photo-locations are illustrated in Figure 9.4. An existing view is shown from each photo-location to provide a representation of the current view and two proposed views are presented – one showing average flow at 1.3 metres and another showing low flow conditions at 0.3 metres.

Visualisations such as photomontages are tools that can represent the likely effect of a development at a particular time and are used to inform the viewer's prediction of how that development will appear. In terms of impact quality however, i.e. whether a visual impact is deemed to be positive, negative or neutral, this involves a degree of subjectivity.

9.2.6.2.2 Photo-location 1



Plate 9.17 Existing view looking upstream from photo-location 1 (Pedestrian Bridge)



Plate 9.18 Proposed view looking upstream from photo-location 1 at average flow (Pedestrian Bridge)



Plate 9.19 Proposed view looking upstream from photo-location 1 at low flow (Pedestrian Bridge)

Existing View - Looking Upstream

Photo-location 1 is on the pedestrian footbridge linking the north and the south banks of the Bandon River upstream of Bandon Bridge and just downstream of the Bandon Weir. The existing view looking upstream from the footbridge presented in Plate 9.17 shows the Bandon Weir in the centre of the photograph with the river wall visible to the left of the picture (southern bank) and modern apartment block to the right (northern bank). The Bandon River itself flows through the centre of the photograph. Upstream of the Bandon Weir, mature broadleaved trees line the river bank, although some are also present downstream of this point. Downstream of the weir within the river channel, areas of bedrock and small islets vegetated with rank grasses are visible, particularly to the left of the photograph. On the southern bank, part of the urban fabric of Bandon Town is also shown.

Proposed View - Average Flow - Looking Upstream

The proposed view at average flow at photo-location 1 (Plate 9.18) shows the proposed rock ramp, which will serve as a fish pass to the left of the picture. The weir and all other infrastructure visible in the existing view will remain *in-situ*. Apart from the presence of the proposed rock ramp, the most noticeable change will involve the drop in the channel bed resulting from the dredging of substrate during the proposed works. This will leave exposed rock at the base of the river banks, as shown along the northern bank as shown to the right of the photomontage. The channel downstream of the hydro-electric station on the northern bank will enter the Bandon River with a greater fall and therefore will result in more turbulence at its outfall. The proposed flood defence wall on the northern bank to be constructed in front of the multi-storey modern apartment block is also visible in this proposed view. The proposed view shows less turbulence in the river channel than in the existing view as the bed of the river will be lowered and the river at this location will have more pool characteristics than at present.

Proposed View - Low Flow - Looking Upstream

The proposed low flow view (Plate 9.19) shows a similar scene to the proposed average flow view, with lower water levels evident in the latter. The lower part of the rock ramp is also exposed. In this view the location of the start of the dredge is quite noticeable as there is a visible drop from the original bed level below the Bandon Weir to the start of the dredged area, which resembles a second weir.



Plate 9.20 Existing view looking downstream from location 1 (Pedestrian Bridge)



Plate 9.21 Proposed view looking downstream from location 1 at average flow (Pedestrian Bridge)



Plate 9.22 Proposed view looking downstream from location 1 at low flow (Pedestrian Bridge)

Existing View - Looking Downstream

The existing view looking downstream from the pedestrian bridge shows Bandon Bridge in the centre of the photograph (Plate 9.20). This stone bridge is an important landmark and is a dominant feature within the river in Bandon Town. The photograph shows modern apartments to the left (northern bank) and Bandon Town Centre to the right (southern bank). The pedestrian walkway is visible on the northern bank and the river wall forms the boundary of the river channel to the south. Small islets are also present within the river channel.

Proposed View - Average Flow - Looking Downstream

The proposed view looking downstream from photo-location 1 (Plate 9.21) shows a lower water level due to the deepened river bed resulting from the proposed dredging works. The lowered channel bed level as presented in the photomontage has the effect of exposing rock along both banks and the pier bases of Bandon Bridge.

Proposed View - Low Flow - Looking Downstream

The proposed low flow view (Plate 9.22) is similar to the proposed average flow view, with the exception of water levels being a metre lower in the latter photomontage.

9.2.6.2.3 Photo-location 2



Plate 9.23 Existing view looking upstream from photo-location 2 (Bandon Bridge)



Plate 9.24 Proposed view looking upstream from location 2 at average flow (Bandon Bridge)



Plate 9.25 Proposed view looking upstream from location 2 at low flow (Bandon Bridge)

Existing View – Looking Upstream

The existing view upstream from Bandon Bridge (Plate 9.23) shows the existing pedestrian bridge in the background at current water levels. Bandon Town centre is visible to the left on the southern river bank and on the northern bank the modern apartments and pedestrian walkway are shown.

Proposed View – Average Flow – Looking Upstream

The proposed view upstream from photo-location 2 on Bandon Bridge (Plate 9.24) presents a view of the proposed new pedestrian bridge, whose design concept incorporates representations of the natural features of the riparian environment in order to complement its setting. As discussed above, the deepening of the river bed exposes bedrock on both banks.

Proposed View – Low Flow – Looking Upstream

The proposed low flow scenario is similar to the proposed view at average, with the exception of water levels being a metre lower in the latter photomontage.



Plate 9.26 Existing View looking downstream from photo-location 2 (Bandon Bridge)



Plate 9.27 Proposed view looking downstream at average flow from photo-location 2 (Bandon Bridge)



Plate 9.28 Proposed view looking downstream at low flow from photo-location 2 (Bandon Bridge)

Existing View - Looking Downstream

Photo-location 2 is on Bandon Bridge, the sole route across the Bandon River in Bandon Town for vehicular traffic. The existing view looking downstream from this location is presented as Plate 9.26. Both banks are host to various commercial/industrial premises, which back onto the river. The pedestrian walkway is visible on the right hand of the photograph (southern bank). Mature broadleaved trees flank the river further downstream in the background of this photograph.

Proposed View – Average Flow - Looking Downstream

The proposed view at average flow at photo-location 2 shows a lower water level due to the lowered river bed resulting from the proposed dredging works. The lower water level leaves more of the stone river wall exposed than is currently the case. A proposed flood defence wall along the back of premises on the northern side of the Glasslinn Road backing onto the Bandon River is also visible along the right-hand side of the pedestrian walkway in this proposed view.

Proposed View – Low Flow - - Looking Downstream

The proposed low flow view shows a similar scene to the proposed average flow view, with the exception of water levels being markedly lower in the latter montage.

9.2.6.2.4 Photo-location 3



Plate 9.29 Existing view looking downstream from photo-location 3 (d/s of Bandon Bridge on right bank)



Plate 9.30 Proposed view looking downstream from photo-location 3 at average flow (d/s of Bandon Bridge on right bank)



Plate 9.31 Proposed view looking downstream from photo-location 3 at low flow (d/s of Bandon Bridge on right bank)

Existing View

Photo-location 3 is on the southern bank of the Bandon River approximately 250 metres downstream of Bandon Bridge on the pedestrian walkway along the river bank. The existing view presented in Plate 9.29 shows the view downstream looking in a north easterly direction. Mature broadleaved trees border the northern river bank on the left hand side of the photograph. A large stone dwelling house is also visible on the northern river bank.

Proposed View – Average Flow

The proposed view at average flow at photo-location 3 (Plate 9.30) presents a view of the proposed flood defence wall along the northern bank opposite this location. The construction of this flood defence wall will necessitate the removal of mature broadleaved trees along the river bank, which served to screen the residential buildings from view. The lowering of the river bed due to the proposed dredging works will also result in a drop in the river channel and the exposure of bedrock along the river bank.

Proposed View – Low Flow

The proposed view under low flow conditions (Plate 9.31) shows a similar scenario to the proposed average flow view, However water levels are noticeably lower in the latter montage, thus exposing a greater degree of bedrock on the banksides.

9.2.6.2.5 Photo-location 4



Plate 9.32 Existing view looking downstream from photo-location 4 (left bank at chainage 11700)



Plate 9.33 Proposed view looking downstream from photo-location 4 at average flow (left bank at chainage 11700)



Plate 9.34 Proposed view looking downstream from photo-location 4 at low flow (left bank at chainage 11700)

Existing View

Photo-location 4 is approximately 650 metres downstream of photo-location 3 and the photograph presented as Plate 9.32 shows the view from the left bank of the Bandon River looking downstream in a south easterly direction. The river is shown at average flow and the water is almost level with the adjacent bank. Mixed riparian woodland is present on both banks at this location and a commercial/industrial premises is visible on the southern bank.

Proposed View – Average Flow

The proposed view at average flow at photo-location 4 (Plate 9.33) presents a view of the proposed flood defence embankment and flood defence wall on the right bank opposite this location. The construction of the flood defence embankment will result in the removal of the stand of mixed woodland along the right bank, thus revealing views of the N71 National Secondary Road linking Bandon to Cork City in the background. The lowering of the river bed due to the proposed dredging works will also result in a drop in the river channel and the exposure of bedrock along the river bank.

Proposed View – Low Flow

The proposed view under low flow conditions (Plate 9.34) is similar reflects the same changes as shown in the proposed average flow view. However water levels are noticeably lower in the low flow montage, thus exposing a greater proportion of bedrock on the banksides.

9.2.6.2.6 Photo-location 5



Plate 9.35 Existing view looking upstream from photo-location 5 (O'Driscoll's Bridge)



Plate 9.36 Proposed view looking upstream from photo-location 5 at average flow (O'Driscoll's Bridge)



Plate 9.37 Existing view looking upstream from photo-location 5 at low flow (O'Driscoll's Bridge)

Existing View

Photo-location 5 is on O'Driscoll's Bridge, some three kilometres downstream of Bandon Town and the next bridge on the Bandon River downstream of Bandon Bridge in Bandon Town. The existing view presented in Plate 9.35 shows the view upstream from O'Driscoll's Bridge with broadleaved woodland present on both banks and some pastoral land in the background further west. The densely wooded valley walls shown in this photograph are typical of this stretch of the Bandon River. Branches overhang the river banks. Flow is very slow in this section of the river and rafts of aquatic macrophytes can be seen clearly.

Proposed View – Average Flow

The proposed view at average flow at photo-location 5 shows the impact of the lowering of the channel bed resulting from the proposed dredging process. Exposed rock is visible above the water level at average flow and the lower branches of the bankside trees are no longer overhanging the channel.

Proposed View – Low Flow

The proposed low flow view shows a similar scene to the proposed average flow view, with the exception of the lower water levels evident in the latter montage.

9.3 LIKELY AND SIGNIFICANT IMPACTS AND ASSOCIATED MITIGATION MEASURES

9.3.1 'Do-Nothing' Scenario

In the event that the proposed flood relief scheme were not to proceed, the landscape of the Study Area would evolve based on current trends and views to and from the Study Area would remain unaltered. In the event of further major flood events, the visual amenity of the area would be temporarily affected as flood levels increase and flood damage affects Bandon Town and environs.

9.3.2 Impacts During the Construction Phase

9.3.2.1 Construction Traffic, Materials and Temporary Site Buildings

Short-term Slight to Moderate Negative Impact

The construction phase of the proposed scheme will involve the movement of construction vehicles into and out of the working area, the storage of machinery on site and temporary site buildings and building materials on site. These activities will have a slight to moderate negative temporary impact on the surrounding area in terms of landscape and visual impact.

Mitigation Measures

Any negative impact associated with the proposed works on the visual amenity and landscape within the study area, will be minimised through the implementation of an Environmental Management Plan (EMP) and a Traffic Management Plan. A construction compound will be used to house materials, plant and machinery, welfare facilities and site offices as part of the EMP and traffic movements will be subject to regulation through the traffic management plan.

Residual Impact - Short-term Slight Negative Impact

The residual impact will be reduced to a short-term slight negative impact as a result of the mitigation measures associated with the construction phase of the proposed scheme.

9.3.2.2 Construction Noise and Activity

Short-term Slight to Moderate Negative Impact

The construction phase of the proposed scheme will have a slight negative impact on the landscape character of the Study Area, as construction noise and activity will all impinge on the landscape amenity of the Study Area. The slight to moderate negative impact on landscape character will, however, be a localised, temporary impact and will decrease with distance from the site.

Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of the proposed development, as described in Chapter 8 of this EIS on Air, Climate and Noise. These measures will mitigate the slight short-term negative impact associated with construction phase noise, thereby reducing the potential negative impact on landscape character.

Residual Impact - Short-term Slight Negative Impact

The mitigation measures described in Chapter 8 of this EIS will reduce the severity of the impact to a short-term slight negative impact.

9.3.3 Impacts During the Operational Phase

9.3.3.1 Lowering of Channel Bed of Bandon River

Permanent Slight Negative Impact

The proposed scheme will involve the deepening of the river bed of the Bandon River by an average depth of one metre over the length of the dredge from just downstream of the Bandon Weir in Bandon Town as far as O'Driscoll's Bridge approximately 3.6 kilometres downstream. The increased depth of the channel and depth to the water column will alter the appearance of the river over this section of its course. The lowering of the bed will also expose bedrock at the base of the banks above the new average and low water levels. Although these newly exposed rock surfaces will appear modified in the short-term,

the process of succession will result in the revegetation of the banks themselves and also screening by overhanging vegetation such as grasses, shrubs and trees.

Mitigation Measures

The revegetation of the newly exposed rock surfaces on the banks of the Bandon River will be permitted to proceed and future maintenance works will not involve the removal of bankside vegetation except in particular circumstances such as, for example, where access is required to the river or where overhanging branches are causing a severe impediment to flows.

Residual Impact – Permanent Slight Negative Impact

The residual impact is characterised as being a permanent slight negative impact as the natural appearance of the Bandon River over the 3.6 kilometres to be dredged will be modified. However as discussed above, natural regeneration of vegetation will ameliorate this effect and it is likely that the visual impact of these works will recede over time as the banks revegetate naturally.

9.3.3.2 Construction and Improvement of Flood Defence Walls, Embankments and Other Infrastructure

Permanent Slight to Moderate Negative Impact

As part of the proposed scheme, a number of flood defence walls and flood defence embankments will be constructed within the environs of Bandon Town. In addition, some existing flood defence walls and embankments will be improved and enhanced. The visual impact of some of proposed flood defence walls can be seen in the photomontages presented in Section 9.3.6.2 of this Chapter.

Mitigation Measures

The proposed flood defence walls will be finished in local stone in order to be more sympathetic to the local built environment and all embankments will be grassed over to provide a natural appearance.

Residual Impact – Permanent Slight Negative Impact

As the flood defence walls and embankments will be constructed and improved within the environs of Bandon Town, these works will occur within an urban setting and therefore will not constitute a significant impact on visual amenity. In addition, flood defence walls will be finished in local stone and embankments will be grassed over to provide a natural finish for this proposed new flood defence infrastructure.

9.3.3.3 Removal of Trees and Bankside Habitats

Long-Term Moderate Negative Impact

In order to gain access to the river during the construction of the proposed scheme and to construct flood defence walls and embankments on the banks of the Bandon River, some treelines and individual trees will need to be removed. Mature trees provide screening and also are intrinsically valuable in terms of visual amenity. Natural bankside habitats will also be removed or altered as part of the proposed works.

Mitigation Measures

Where possible, bankside vegetation will be retained during the construction process with the location of access and egress points designed to minimise impacts on trees and treelines in particular. It is however likely that much of the existing bankside habitat will be lost during the works period in order to allow the works to proceed in a timely manner thus minimising the duration of in-stream works.

The proposed scheme will also include replanting and rehabilitation works to replace and enhance bankside habitats that are lost as part of the proposed works. Native species will be used wherever possible to preserve the natural character of the area. The planting will be designed to facilitate maintenance of the channel in the future.

Residual Impact – Long-term Slight Negative Impact

The residual impact of the removal of trees and treelines is characterised as a long-term slight negative impact as efforts will be made to retain mature broadleaved trees wherever possible and rehabilitation works will also be incorporated into the scheme. Natural regeneration is also likely to occur along the river.

9.3.3.4 Replacement of Existing Pedestrian Bridge

Long-term Significant Positive Impact

In order to accommodate the proposed dredging works in the vicinity of the existing pedestrian bridge, this will be removed and replaced by a specially designed new pedestrian bridge. The design concept of the proposed new pedestrian bridge focuses on the natural elements of the Bandon River's riparian setting and references fauna such as Salmon and Herons, which are inextricably linked with the river. The replacement of the existing bridge with a bespoke design will add to the visual amenity of the Bandon River and Bandon Town.

9.3.3.5 Future Maintenance

Long-term Slight Negative Impact

It is anticipated that the future maintenance associated with the proposed works will involve the removal of deposits exposed above low water levels on an approximate 5 year rotation. The works will however be isolated in terms of location and also much smaller in scale than the original dredging works. Therefore the impact on visual amenity will be much more limited than during the original works.

Mitigation Measures

The works will be conducted at five year intervals and best practice will be adhered to at all times in terms of construction, traffic movements and general environmental themes. This will ensure that the impact on visual amenity is minimal.

Residual Impact – Long-term Sporadic Imperceptible to Slight Negative Impact

The residual impact will be long-term but sporadic in nature and will be minor in terms of visual amenity as it will be localised in nature.